View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by eVols at University of Hawaii at Manoa

SOUTHEAST ASIAN LINGUISTICS SOCIETY SEALS

Journal of the Southeast Asian Linguistics Society
JSEALS Vol. 13.1 (2020): 53-85
ISSN: 1836-6821, DOI: http://hdl.handle.net/10524/52460
University of Hawai'i Press

RECONSIDERING THE DIACHRONY OF TONE IN RMA[1]

Nathaniel A. Sims
University of California Santa Barbara
nsims@ucsb.edu

Abstract

Prior work has suggested that proto-Rma was a non-tonal language and that tonal varieties underwent tonogenesis (Liú 1998, Evans 2001a-b). This paper re-examines the different arguments for the tonogenesis hypothesis and puts forward subgroup-internal and subgroup-external evidence for an alternative scenario in which tone, or its phonetic precursors, was present at the stage of proto-Rma. The subgroup-internal evidence comes from regular correspondences between tonal varieties. These data allow us to put forward a working hypothesis that proto-Rma had a two-way tonal contrast. Furthermore, existing accounts of how tonogenesis occurred in the tonal varieties are shown to be problematic. The subgroup-external evidence comes from regular tonal correspondences to two closely related tonal Trans-Himalayan subgroups: Prinmi, a modern language, and Tangut, a mediaeval language attested by written records from the 11th to 16th centuries. Regular correspondences among the tonal categories of these three subgroups, combined with the Rma-internal evidence, allow us to more confidently reconstruct tone for proto-Rma.

Keywords: Tonogenesis, Trans-Himalayan (Sino-Tibetan), Rma, Prinmi, Tangut, Historical linguistics
ISO 639-3 codes: qxs, pmi, pmj, txg

1. Introduction

This paper addresses the diachrony of tone in Rma,[2] a group of northeastern Trans-Himalayan[3] language varieties spoken in 四川 Sìchuān, China. Rma varieties exhibit diverse word-prosodic systems: most southern varieties are tonal while northern varieties are non-tonal. In prior work, it has been proposed that proto-Rma was a non-tonal language and that tonal varieties underwent tonogenesis (Liú 1998, Evans 2001a-b). This paper re-examines the arguments for the tonogenesis hypothesis and puts forward subgroup-internal and subgroup-external evidence that tone in southern Rma is not a subgroup-internal innovation.

The subgroup-internal evidence for reconstructing tone can be found in tonal correspondences across tonal varieties. Regular tonal correspondences between varieties allow us to put forward a working hypothesis that proto-Rma had a two-way tonal contrast. Furthermore, existing accounts of how tonogenesis occurred in the tonal varieties are shown to be problematic. The subgroup-external evidence comes from

[1] I wish to thank Eric W. Campbell, Guillaume Jacques, Nathan W. Hill, Carol Genetti, Matthew Gordon, Katia Chirkova, Randy J. LaPolla, Lai Yunfan, Gong Xun, David Peterson, Jesse Gates, Sonam Lhundrup, Jonathan Evans, Jackson T.S. Sun, Alexis Michaud, Cathryn Yang, and two anonymous reviewers for comments and corrections on this paper. I am solely responsible for any remaining errors. An earlier version of this paper was presented at the 50th International Conference on Sino-Tibetan Languages and Linguistics on November 16th, 2018. Fieldwork was funded by the Endangered Languages Documentation Programme and the Firebird Foundation for Anthropological Research.

[2] These language varieties are also called Qiāng 羌 (see Wáng 1998, *inter alia* for a history of the terminology).

[3] The name of the family is a point of contention. I prefer 'Trans-Himalayan' simply because it is more neutral in that it is does not use ethnonyms. I am using it in a way that is non-committal on the issue of the place of Sinitic within the family.

Copyright vested in the author; Creative Commons Attribution Licence

regular tonal correspondences with Prinmi, a modern subgroup closely related to Rma, and Tangut, a mediaeval Trans-Himalayan language attested by written records dated from 1042 to 1502 CE that is also considered to be closely related to Rma. Regular correspondences among the tonal categories of these three subgroups, combined with the Rma-internal evidence allow us to more confidently reconstruct tone for proto-Rma.

The paper is organized as follows: §2 presents and critically examines prior arguments that tone in Rma is a secondary, subgroup internal innovation; §3 provides subgroup-internal evidence that tone is a shared retention in Rma; §4 provides subgroup-external evidence that tone is a retention; and §5 summarizes the findings of this study and points to areas where further research is needed.

2. Old or new? Issues in reconstructing tone for proto-Rma

Rma varieties are spoken along the upper 岷 Mín river in the 阿坝 Rngaba Qiang-Tibetan Autonomous Prefecture of western 四川 Sìchuān. The area in which Rma is spoken spans five counties: 汶川 Wènchuān, 理 Lǐ, 茂 Mào, 松潘 Sōngpān, and 黑水 Hēishuǐ. Although Rma has traditionally been split into two subgroups, southern Rma and northern Rma (H. Sūn 1981, Liú 1998, Huang & Zhou 2006), this classification is a typological one and is not based on shared innovations. The relationships between varieties more closely resemble a continuum than they do a simple North-South bifurcation (LaPolla with Huang 2003, C. Huang 2004, Zheng 2015). For example, some varieties in the eastern regions of Mao County, such as the 永和 Yǒnghé variety, do not fit neatly into a North-South dichotomy and may belong to a separate subgroup (Sims 2016). For this paper, I will refer to the varieties spoken in Lǐ and Wènchuān County as 'southern,' the varieties of southeast Mào County as 'central,' and the varieties of northern Mào County, Sōngpān County and Hēishuǐ County as 'northern,' with the caveat that the internal classification of some of these varieties has yet to be fully worked out and these terms are geographic rather than well-defined genetic subgroups.

Rma varieties exhibit a diverse array of tonal and accentual systems. Many, but not all, geographically southern varieties of Rma have lexical tone, whereas geographically northern varieties lack tone and have lexical stress-accent (H. Sūn 1981:177-78; H. Liú 1991; Liú 1998:106; Evans 2001a-b, 2006; LaPolla with Huang 2003:33-35; C. Huang 2004:25-16). Tonal varieties have two major tones: H(igh) and L(ow). In the tonal southern varieties, these two tones are typically realized as [55] vs. [31 ~ 33] respectively (Evans 2001a-b). However, in the geographically central Yǒnghé variety, the two-way /H/ vs. /L/ tonal contrast is realized phonetically as [53] vs. [13] on monosyllabic forms in isolation (Sims 2017).[4]

In addition to the two 'primary' tones, some southern varieties possess a small number of 'minor' tones. These minor tones are infrequent, positionally constrained (i.e. restricted to certain syllable types), and largely found in either borrowings from Sichuanese Mandarin or cases of syllable coalescence (Evans 2001a-b, Stanford & Evans 2012, Kirby 2001). Table 1 gives a frequency of occurrence of the tone types in the southern 龙溪 Lóngxī variety.

Table 1: *Frequency of pitch patterns in Lóngxī Rma (data from Evans 2001a)*

Pitch pattern	Type frequency	Percentage	Restrictions
[55]	2173	35.33%	none
[33] ~ [31]	3912	63.61%	none
[13 ~ 213]	43	0.7%	voiced initials only
[35]	19	0.31%	borrowings, coalesced syllables
[51]	3	0.05%	borrowings, coalesced syllables

The data in Table 1 show that the two primary tones account for most of the lexicon and that the minor tones are rare. This paper deals with the diachronic origins of the primary H vs. L tonal distinction and will not deal with the minor tonal melodies.

[4] This tonal contrast was previously misanalysed as a vowel-length distinction (Sims, 2014). However, the concomitant difference in vowel length for H and L toned syllables in isolation was later shown to be secondary to the tonal distinction (Sims 2017).

Prior studies of tone in Rma have described tone as a secondary innovation which arose through either (1) transphonologization of tone (*sensu* Mazaudon 1977) via segmental simplification or (2) contact-induced reanalysis of older stress-accent patterns as tonal melodies.

This section presents and critically examines the arguments that have been given for tone as a subgroup-internal innovation.

2.1 Tone from segmental simplification

刘光坤 Liú Guāngkūn (1998:117-126) was the first to study the origins of tone in the southern varieties. Liú argues that tone in the southern varieties arose through a confluence of (1) the simplification of complex onsets, (2) the loss of coda consonants. I will deal with each of these issues separately.

2.1.1 Tone from onset simplification

Liú (1998:120) notes that northern varieties have large inventories of complex onsets, whereas southern varieties have much smaller inventories of complex onsets and give evidence that tonal splits may be a result of onset simplification. A subset of those forms is presented in Table 2.

Table 2: *Tone splits from onset simplification (data from Liú 1998:120)*

Máwō	**Miánchí**	**gloss**
ksi	si^{55}	'three'
si	si^{31}	'crow (of a rooster)'
gzə	z˩^{55}	'give'
zə	z˩^{31}	'common yellow cow, male'

麻窝 Máwō is a northern, atonal variety with a rich inventory of complex onsets. Mianchi is a southern, tonal variety with an impoverished set of complex onsets. Liú (1998:121-22) proposes that the simplification of onsets in varieties like Miánchí has led to the development of a compensatory tonal distinction: *CCV → CV+H and *CV → CV+L. One issue with this argument is that, as Evans (2001b:216) and Kirby (2001) have pointed out, there is not a straightforward correlation between onset-complexity and the presence or absence of tone in each dialect. The 桃坪 Táopíng variety provides a nice example of this point. 桃坪 Táopíng is a segmentally conservative southern variety with twenty-four distinct consonant clusters in onset position (H. Sūn 1981; Evans 2001a). Nevertheless, Táopíng has essentially the same (H vs. L) tonal system as southern varieties such as Lóngxī and Miánchí, though the latter two varieties have only retained two or three onset clusters (Evans 2001a:216). In brief, onset simplification can account for subsequent tonal splits in Lóngxī and Miánchí but cannot account for the primary tonal distinction found in the conservative Táopíng variety.

2.1.2 Tone from coda loss

Liú (1998:121-22) postulates that the loss of coda consonants may have led to the development of tone in some varieties. It is the received wisdom that Proto-Trans-Himalayan (hereafter PTH) consonant codas were lost in all known varieties of Rma, not just the varieties which are tonal, and the codas present in varieties that have them are secondary developments (Liu 1984). For example, in 荣红 Rónghóng, a segmentally conservative northern variety, all PTH consonant codas were lost, yet the variety does not have tonal distinctions (LaPolla with Huang 2003:23). Rónghóng does possess consonant codas, and even coda consonant clusters, but these are clearly of secondary origin and have developed due to syllable coalescence (LaPolla with Huang 2003: 23-28, see also C. Huang 1998, Evans 2001b:87-88, J. Sun 2003 for examples and discussion).

Supposing it was the loss of codas rather than the loss of initials which created the conditions for tonogenesis in Rma, it may be the case that either (1) all varieties underwent tonogenesis and then some varieties subsequently lost the tonal contrast, or (2) coda-loss happened in a variegated way such that some varieties became tonal while others never developed tone. A thorough comparison of rhymes of a segmentally conservative tonal variety of Rma with consonant codas in other Trans-Himalayan languages that better preserve PTH codas, such as Written Tibetan, is beyond the scope of this paper, but such an investigation may yet reveal insights into the phonetic origins of tones in Rma.

Having shown that Liú's proposal that tone arose from onset simplification is problematic for tonal varieties with complex onsets, and that evidence for tone from codas has not been demonstrated conclusively, I now turn to another perspective, suggested by Liu (1998) and taken up by Evans (2001a-b) and Evans & Sun (2013), in which tone arose due to contact with Chinese.

2.2 Tone from reanalysis

Using data from three key southern varieties, Táopíng, Lóngxī, and Miánchí, Evans (2001a) reconstructs a two-way, *L vs. *H, contrast for proto-southern Rma. Evans (2001b:216) finds no evidence for tone in these southern varieties having arisen from segmental origins, and concludes that the Rma data represent "the first documented case of which I am aware in which tonogenesis has occurred without any concomitant loss of segmental information." Although Evans (2001a-b) considers the possibility that these tonal contrasts predate proto-southern Rma and date all the way back to Proto-Rma, he draws the following conclusions:

> (1) Tone cannot be a retention from an earlier state and must be a secondary development in the varieties that have it.
> (2) There is no evidence for traditional tonogenesis (i.e. transphonologization of segmental contrasts into suprasegmental contrasts)
> (3) Extensive bilingualism with Sichuanese Mandarin played a role in speakers re-analyzing older accentual patterns as tonal melodies.

The following sections critically examine Evans' arguments for tone as innovation from reanalysis.

2.2.1 'Lack of inherited tone from earlier stages'[5]

The first argument Evans (2001a-b) puts forward is that there is no evidence that the tone is inherited from earlier stages. Evans (2001b:77) states that:

> There is at this point no evidence that proto-Qiangic was a tonal language. On the contrary, as mentioned above, the most phonologically conservative languages and dialects (e.g. rGyalrong, Daufu/Ergong), languages which preserve PTB initials and codas, do not have phonemic tone… With no evidence for tones at the time depth of proto-Qiangic, the origin of SQ tones cannot reasonably be claimed to pre-date Proto-Qiang). In fact, like rGyalrong and Ergong, Northern Qiang, the phonologically conservative sister to Southern Qiang, bears no evidence of ever having had tones… The complete lack of tonal phenomena in Northern Qiang suggests that tones arose after the Northern and Southern Qiang dialects had diverged from each other.

There are two potential issues with this line of argumentation. Firstly, this argument assumes a close phylogenetic relationship between Rma and Rgyalrongic, namely, that they both belong in the 'Qiangic' subgroup. The phylogenetic relationship between these clades has been the subject of some debate (see Chirkova 2012; LaPolla 2013; Jacques 2016b and references therein). Given that the precise relationship between Rma and Rgylarongic is contested, it is probably best to avoid making claims about the status of tone in proto-Rma based on the presence or absence tone in modern Rgyalrongic languages. Secondly, even aside from the issue of the exact relation between Rgyalrongic and Rma, it is not the case that all Rgyalrongic languages are non-tonal. Since Evans' work was published, a considerable amount of work has been done on suprasegmental phonology on Rgyalrongic that reveals that suprasegmental contrasts may be a conservative feature of some varieties. Consider the 'Horpa' sub-branch of Rgyalrongic, which contains three major mutually unintelligible varieties: Northern, Western, and Central. The Northern and Western varieties are tonal, whereas the Central varieties exhibit variation. Two sub-varieties of Central Horpa, Rta'u (Stau) and Dgebshesrtsa, are atonal, whereas the other, Upper Stongdgu, has contrastive phonation (J. Sun, Tian, & Chiu 2017, J. Sun to appear). Outside of Horpa, tone is also found in other subgroups of Rgyalrongic. The Wobzi variety of Khroskyabs (Western Rgyalrongic) has a two-way, H vs. HL tonal contrast (see Lai 2017). 卓克基 Zhuókèjī Rgyalrong has a privative tonal contrast between /HL/ and /Ø/ (Lin 2012). Jacques (2005) has shown that some non-tonal varieties of Rgyalrong proper, such as Japhug Rgyalrong, were once tonal, but have since lost tonal contrasts. Thus, although the suprasegmental

[5] If in quotes, the section title refers to a corresponding section in Evans' 2001 paper.

phonology of proto-Rgyalrongic has yet to be reconstructed, we cannot rule out the possibility that ancestral language had suprasegmental contrasts.

2.2.2 'Correlation of tonality and borrowing'

Another argument for the newness of tone is, as initially pointed out by Liú (1998:121-26), and discussed at length in Evans (2001a-b) and Stanford & Evans (2012), is the fact that varieties with more loanwords from Chinese tend to be more tonal. One issue with this claim is that although the key southern varieties have different rates of borrowing from Chinese (see Evans 2001b:80), all three have the same basic H vs. L contrast in the native lexicon (Evans 2001a-b). It appears that, for some southern varieties, contact with Chinese has played a role in expanding the number of tonal types (see Table 1 above). However, there is no evidence to show that the incorporation of Chinese loans was the impetus for the major tone contrast (H vs. L) found in the native lexicon.

2.2.3 'Weak role of tone in tonal dialects'

Another argument for tone as an innovation is that tone has a low functional load in the varieties that have it (Evans 2001a:213-214; Evans 2001b:78). Evans (2001b:78) states that there is a small number of tonal minimal pairs and that this "minimal degree of functionality runs contrary to expectations for a longstanding tonal system." Evans (2001b :80) goes on to state that:

> Further evidence for the weak role of tone in SQ dialects comes from the widely diverging frequency of occurrence of tones in each dialect ... In Longxi and Mianchi Low tones/pitches are about twice as common as High tones/accented syllables, and minor tones occur on only a few percent of the vocabulary. By contrast, in Lolo-Burmese languages, whose tonality can be traced back to the first millennium, tones *1 and *2 occur with virtually identical frequency (Matisoff 1998:9).

There are two potential issues with this argument. First, while it is the case that tonal minimal pairs are infrequent in the data, one could shift perspectives and view the limited nature of tone in the southern varieties as representing an incomplete preservation of an older tone system which has been completely lost in the northern varieties. Second, it is not clear why the frequency of occurrence of a given contrast would be an indicator of the age of that contrast.

2.2.4 Reanalysis of accent

Evans argues that the best explanation of the presence of tone in the southern varieties is that tone was developed through reanalysis and contact between southern Rma and Sichuanese Mandarin as an explanation for reanalysis. That is, extensive bilingualism and contact with Sichuanese Mandarin led speakers of southern Rma to reanalyze older accentual patterns as tonal melodies. More recently, Evans & Sun (2013) have stated that tone in the southern varieties "probably originates from a reanalysis of historical weak-strong stress patterns as L-H tones, due to borrowings of tonal words from Chinese (Evans 2001)".

Reanalysis of accent as tone is an attested, if somewhat uncommon, pathway to tonogenesis (Kingston 2011:2320-2321). In Swedish and Norwegian, tonogenesis came from the reanalysis of the F0 correlate of stress in the ancestral language as tone (Riad 1998, 2003). The role of stress-accent patterns in tonogenesis has also been documented in Trans-Himalayan-speaking regions. Caplow (2009, 2017) has shown that the stress-patterns of proto-Tibetan, which was non-tonal, played a formative role in the development of tone in the modern tonal varieties. In modern tonal varieties of Tibetan, there is an asymmetry such that for disyllabic non-verbs (nouns, adjectives, numerals), the first syllable may carry either a L or H tone, but the second syllable invariably carries a H tone. Caplow (2009, 2017) argues that this patterning is a reflex of an iambic stress-accent pattern typical of non-verbs in proto-Tibetan.

A crucial difference, however, between the situation for Rma and the scenarios described for Swedish, Norwegian, and Tibetan is that Rma varieties present a binary tonal contrast on monosyllabic forms. If we consider 'accent' as a relative notion of syllable prominence, reanalysis can readily explain how disyllabic iambs and trochees become L-H and H-L tonal melodies respectively. However, reanalysis cannot readily account for the development of tonal contrast on monosyllabic forms. Table 3 gives examples of

monosyllabic forms which constitute tonal near-minimal pairs in the tonal southern and central Rma varieties, but have no tone in the northern varieties.[6]

Table 3: *Monosyllabic tonal near-minimal pairs in Rma*

southern			**central**	**northern**	
Lóngxī	**Miánchí**	**Táopíng**	**Yǒnghé**	**Rónghóng**	**Gloss**
pú H	pó H	po^{55} H	pú H	pə	'buy'
pià L	pià L	pa^{33} L	pǎ L	pie	'pig'
tsɨ́ H	tɕɨ́ H	χtʂə^{55} H	tʂɨ́ H	xtʂə	'gall'
tɕà L	tɕè L	tɕi^{33} L	tɕǐ L	tsi	'daughter'
sɨ́ H	ʂí H	sʅ^{55} H	sɨ́ H	sə	'who'
sà L	sà L	sa^{33} L	sǎ L	sɑ	'blood'

While it is possible that the tonal distinction in these words has a phonetic origin (i.e loss of codas for words such as 'pig' (cf. Written Tibetan ཕག *phag* 'pig', Japhug Rgyalrong paʁ 'pig')), the forms in Table 3 appear to have always been monosyllabic and show no evidence of syllable coalescence or other types of restructuring. That is, the tonal contrasts on these forms do not appear to have roots in older patterns of syllable prominence.

In summary, neither onset simplification nor reanalysis of accent patterns are convincing arguments for explaining the tonal contrasts present in the southern and central Rma varieties. Having outlined the weaknesses in the arguments for tone as an innovation internal to southern Rma, the following sections give subgroup-internal and subgroup-external evidence that the H vs. L distinction reconstructed by Evans for proto-southern Rma is in fact a shared retention from proto-Rma.

3. Subgroup-internal evidence for tone as a retention

In this section, I present regular correspondences between the tones of the southern varieties and the tones of the central Yǒnghé variety as evidence for reconstructing tone for proto-Rma. The tonal correspondences between the tonal southern varieties and the Yǒnghé variety are regular. However, the interpretation of these correspondences depends on the genetic relationship between Yǒnghé and the southern varieties. If Yǒnghé belonged in a subgroup with southern Rma, regular tonal correspondences may be the result of a sub-group internal innovation. If, on the other hand, Yǒnghé belonged in a subgroup with northern varieties, regular tonal correspondences between Yǒnghé and southern varieties would suggest that tonal contrasts, or their phonetic precursors, date back to proto-Rma.

Central varieties may be more closely related to the northern groups. Huang (2010:252) has stated that central varieties, such as Yǒnghé, pattern with the northern varieties with respect to verbal morphology. There is some evidence to support this view. For example, Yǒnghé possesses an 'upstream' directional prefix, /nə-/, which is cognate with the 'upstream' directional prefix, *nu- reconstructed by Evans (2004:20) for proto-northern-Rma. The evidence is not necessarily conclusive, however, because the 'upstream' prefix in central and northern varieties may be a shared retention from proto-Rma rather than a shared innovation among the varieties that have it. Evans (2014:20) has shown that southern Rma varieties have innovated a series of perfective-marking verbal suffixes, whereas northern varieties have not shared in this innovation. In this respect, Yǒnghé patterns with the northern varieties.

[6] I have included data from Lóngxī, Táopíng, Miánchí (data from Evans 2001a), and Yǒnghé (data from author). In addition to these, I include cognates from the non-tonal Rónghóng variety (data from LaPolla with Huang 2003). The sources consulted represent suprasegmental phenomenon in various ways. Some use the Chao (1930) system of transcribing pitch using superscript numerals 1 to 5 to represent the lowest and highest pitches respectively. Others use diacritics to represent tone. The L tone in the Yǒnghé variety (phonetically [LH]) is represented with a hachěk.

The correspondences are given in the following tables. Table 4 shows a regular correspondence between H in the southern varieties and H in the Yǒnghé variety.

Table 4: *Comparison of /H/ across Rma varieties*

southern			**central**	**northern**	
Lóngxī	**Miánchí**	**Táopíng**	**Yǒnghé**	**Rónghóng**	**Gloss**
zə̀ mú	mɛ̀ mɛ́	χmə^{55}	mə́^{ɪ}	ʐmə	‘name’
tɕé kù	tɕí	tɕi^{55} ko^{33}	tɕí	tɕi	‘house’
tɕ^{h}á	k^{h}í	tɕ^{h}i^{55}	tɕ^{h}í	tɕ^{h}ə	‘want’
p^{h}é	pʂí	pʐi^{55}	p^{h}í	p^{h}i	‘white’
sɨ́	ʂí	sɨ^{55}	sɨ́	sə	‘who’
pú	dɛ̀ pó	po^{55}	pú	pə	‘buy’
ts^{h}uá dà	ts^{h}oú tià	ts^{h}uɑ^{55}	ts^{h}wá tɛ̀	ts^{h}uɑ	‘chop’

The data in Table 5 show a regular correspondence between /L/ in the southern varieties and /L/ [LH] in Yǒnghé. In Yǒnghé, /L/ is [LH] in isolation (see Sims 2017 for discussion).

Table 5: *Comparison of /L/ across Rma varieties*

southern			**central**	**northern**	
Lóngxī	**Miánchí**	**Táopíng**	**Yǒnghé**	**Rónghóng**	**Gloss**
mà	mà	χma^{33}	mə̌^{ɪ}	ʐme	‘autonym’
sà	sà	sa^{33}	sɑ̌	sɑ	‘blood’
bɹà	bʐà	bʐɑ^{33}	bɑ̌^{ɪ}	ba	‘big’
--	ʐà	ʐe^{33}	jɑ̌	jɑq	‘cliff’
tɕà	tɕè	tɕi^{33}	tɕǐ	tsi	‘daughter’
χù	mù	χmə^{33}	hŭ^{ɪ}	xu pɑ	‘fur’
tɕuà	kuà	kua^{33}	kwǎ	tɕye	‘hoe’
pià	pià	pa^{33}	pǎ	pie	‘pig’
là	là	lie^{33}	lǎ	lie	‘thick’

The correspondences between the geographically southern varieties and the Yǒnghé variety are conspicuous. The tones of the central and southern varieties pattern together, whereas the northern variety is completely non-tonal. While not conclusive, Yǒnghé is most likely external to southern Rma, perhaps in a subgroup with northern Rma, and thus tone appears to predate southern Rma. The following sections provide subgroup-external evidence for tone, or the immediate precursor to tone, at the level of proto-Rma.

4. Subgroup-external evidence for reconstructing tone in Rma

The following section provides some comparisons of the tones of the southern and central Rma varieties with two other tonal subgroups of Trans-Himalayan languages: Prinmi and Tangut. Both subgroups belong with Rma within a sub-branch of the family that has been termed ‘Northern Qiangic’ by H. Sun (1991, 2001) and ‘macro-Rgyalrongic’ by Jacques (2014). Sagart et. al (2019:10320) place Tangut with Rgyalrongic inside their ‘Tibeto-Dulong’ subgroup. In this section, each subgroup is introduced, Prinmi in §4.1 and Tangut in §4.2, and some methodological issues related to comparing tones across subgroups are discussed in §4.3 before examining the tonal correspondences in §4.4. The comparison shows that tonal correspondences between Rma and Prinmi are quite regular, while tonal correspondences between these two and Tangut are less robust but nevertheless likely to be cognate.

4.1 Prinmi

Prinmi (also called *Pǔmǐ*) is a group of tonal language-varieties spoken by people belonging to the 普米 *Pǔmǐ* nationality in 云南 *Yúnnán* Province and by people belonging to the Tibetan nationality in Sichuan Province. Prinmi is quite closely related to Rma within the family (Sun 2001, 2004; Daudey 2014). Thurgood (2003:17) has noted that “the consensus that Qiang proper [Rma – NAS] and Prinmi belong in the

same subgroup is easily and fully substantiated by careful examination of cognate sets." There has hitherto been no systematic exploration of the relationship between the tones in Prinmi and the tones in Rma.

4.1.1 Tonal inventories of Prinmi varieties

Unlike Rma, all documented varieties of Prinmi are tonal. Prinmi varieties typically have between two and three tones on monosyllabic nouns (see Ding 2001:57-58 for discussion).[7] All varieties have a /H/ tone. Some varieties also possess a /HL/ tonal melody. In some varieties, the contrast between /H/ and /HL/ is realized as [55] vs [53] on monosyllabic forms in isolation (Ding 2014). In others, the contrast between /H/ and /HL/ is neutralized on monosyllabic forms in isolation, but the underlying contrast emerges when suffixes or clitics are attached to the nouns (Daudey 2014; Ding 2006, 2014).

All varieties also have a 'non-high' tone which is sometimes analyzed as /L/ and sometimes as /LH/. In the 瓦都 Wădū variety (Daudey 2014), /L/ tones are realized as [LH] in isolation. Matisoff (1997) describes the 大洋 Dàyáng variety as having a /H/ vs. /L/ contrast in which /H/ is phonetically level and /L/ is phonetically rising. Jacques (2011) analyzes [LH] words in 水洛 Shuǐluò Prinmi as underlyingly /L/ which are realized as rising because of a post-lexically inserted H tone. Ding (2014) describes the 牛窝子 Niúwōzi variety as lacking /L/, but as having /H/, /LH/, and /HL/ on monosyllabic forms. Nonetheless, one might alternatively posit that the [LH] pattern is underlyingly /L/, but realized as [LH] in isolation. The data from the 兰坪 Lánpíng, 桃巴 Táobā, and 箐花 Qìnghuā (Lu 1983, 2001) varieties are phonetic. Thus, in these data, [55] pitch-patterns may potentially reflect either /H/ or /HL/ tonal phonemes. Likewise, the [13 ~ 35] surface pitch-patterns may reflect either /L/ or /LH/ tonal melodies.

4.1.2 Diachrony of Prinmi tone

For the tones of Prinmi to have bearing on the reconstruction of tone for proto-Rma, it is necessary that the tone in Prinmi is not a subgroup-internal innovation. There are two arguments that tone in Prinmi is an inheritance. First, the tonal correspondences are regular across varieties (see Ding 2007; Matisoff 1997: 206-207). Matisoff (1997) notes the regular tonal correspondences and suggests proto-Prinmi was a tonal language with least a two-way distinction. Second, there is no evidence for tonogenesis from transphonologization of segmental features. For example, while Prinmi varieties vary in the degree to which complex-onsets from PTH are preserved, the onset-simplification found in some northern varieties appears to have had no effect on the tonal categories. Michaud and Jacques (2010) use evidence from early wordlists to show that the simplification of complex-onsets in the northern varieties did not occur until sometime in the 19th century. Thus, the Prinmi tones did not arise because of complex-onset simplification.

While it is established that proto-Prinmi had tonal contrasts, more work is needed to determine whether the contrasts between /H/ and /HL/ or /L/ and /LH/ are secondary innovations in the varieties that have them, or whether more than two tones should be reconstructed for the ancestral language.

4.2 Tangut

Tangut (also called 西夏语 *Xīxià Yǔ*), the official language of the former Tangut Empire, is the language under consideration with a native written tradition.[8] Its early date of attestation (11th century), large number of both religious and secular works in the language, and the growing body of linguistic research on the language make it an invaluable resource for historical-comparative research.[9] Although it was initially thought that Tangut was closer to the Lolo-Burmese languages (Nishida 1967), it is now generally accepted that Tangut is more closely related to Rma and Prinmi (H. Sun 2001, Jacques 2014, Jacques & Michaud 2011, Matisoff 2004, Ikeda 2007).

---

[7] Jacques (2011) describes 水洛 Shuǐluò Prinmi as having four tonal categories to account for alternating verbs, but since I am more focused here on reconstructing the tone for the nominals, I will ignore this issue for now.

[8] For English language introductions to the Tangut language and writing system, the reader is directed to Clauson 1964; H. Gong 2003, H. Gong 2017; Kornicki 2012; and Nishida 1967.

[9] Tangut logographs are followed by the corresponding number in Li Fanwen's (2008 [1998]) dictionary, the segmental representation in Gong's (2002) system, the rhyme category, Jacques' (2014) reconstruction of the pre-Tangut form (when available), and the English gloss. Thus, 嫾 3582 kjɨr 2.85 < *S-krvvt 'gall'. In Jacques' reconstructions, hyphens do not always imply a morpheme boundary.

4.2.1 Tonal categories of Tangut

Tangut had two tones (Clauson 1964; Gong 2003, 2017; Miyake 2012; Nishida 1967; *inter alia*). In the native written tradition, these two tones were referred to using the Chinese terms 平 *píng* 'level' and 上 *shǎng* 'rising' respectively. Miyake (2012:255) has pointed out that these terms were "obviously adopted from the Chinese phonological tradition and may not be meant to be taken at face value as descriptions of tonal contours." Because the language is no longer spoken, it is not possible to collect more data or to check the phonetics of the tones. The two tones are referred to as tone 1 and tone 2 respectively (Gong 2003).

4.3 Methodological issues in comparing proto-Rma, proto-Prinmi, and Tangut

As noted above, Tangut is a valuable resource for historical-comparative work. However, the language presents some difficulties. The Tangut script is a logographic one which does not directly encode phonetic information. Various segmental representations of Tangut have been proposed (Sofronov 1968; Nishida 1976; H. Gong 2002); each system paints a slightly different picture of the phonology (see Jacques 2014). I rely on H. Gong's (2002) system, which has been deemed reliable by Matisoff (2004), Jacques (2014), Hill (2015), and Gong (to appear), with the inclusion of a few minor changes suggested by Jacques (2014) and Hill (2015).

Another potential issue in the comparison of these languages involves the selection of the comparanda. As a way of dealing with the potential for methodological opportunism, all forms that have been proposed as cognate between Rma, Prinmi, and Tangut in the literature are taken into consideration. The data come from many sources (Huang & Dai 1992; Daudey 2014; H. Gong 1999; Jacques 2006, 2009, 2011, 2012, 2014, 2016a; Li 2004; Matisoff 1999, 2003; Nishida 1964, 1976; Sun 2004), and cognate sets proposed in the Sino-Tibetan Etymological Dictionary and Thesaurus (STEDT) were sought.

The segmental correspondences between Rma, Prinmi, and Tangut have yet to be established.[10]Thus, it is not always possible to differentiate cognates from (1) older loans from neighboring languages (such as Tibetan or Chinese) or (2) coincidentally similar forms. More research will be needed to separate the wheat from the chaff. Nevertheless, attempts have been made to identify known loanwords and *Wanderwörter*. Forms which are marked as belonging to the same etymon in STEDT, but which may not be strictly cognate, have been removed.

Certain portions of the lexicon are tonally unpredictable and present problems for comparison. Firstly, in Rma, the tone of affixes and clitics are often context-dependent (Evans 2008, Zheng 2015). This is also true of many Prinmi varieties (Daudey 2014: 68-69; Ding 2006, 2014; Grief 2010; Jacques 2011), and was probably true of Tangut as well (Jacques 2014:259). Thus, this study does not examine the tonal properties of affixes or clitics. Secondly, Rma, Prinmi, and Tangut all possess verbs with alternating tones (Daudey 2014: 108-113, Ding 2014, Evans 2008, Jacques 2011, H. Gong 1998, 2003). These verbs have been excluded from this study. Thirdly, because numerals in Rma and Prinmi are bound elements which obligatorily co-occur with classifiers, the tone of numerals and classifiers are mutually dependent. Furthermore, numerals are generally irregular in the family (Bradley 1989:338-340, 2005; Matisoff 1997). Thus, I have excluded numerals and classifiers from comparison in this study. Fourthly, I have excluded forms which derive from older compounds, as these words often exhibit unpredictable variation in tonal patterns in Rma (Evans 2008) and in Prinmi (Daudey 2014:187-101, Matisoff 1997:207-209). Lastly, I have excluded terms of address because in many Rma varieties, such terms obligatorily take a 'kinship prefix' which may influence the tone of the kinship term (Evans 2004). Having acknowledged the limitations inherent to this comparative endeavor, we can begin comparing forms across languages.

4.4 Correspondence sets

The presentation of these data is as follows. Numbers, such as #0045, represent STEDT etyma set numbers. a. = Rma (LX = 龙溪 Lóngxī, MC = 绵池 Miánchí, TP = 桃坪 Táopíng, YH = 永和 Yǒnghé), b. = Prinmi (SL = 水洛 Shuǐluò, WD = 瓦都 Wǎdū, NWZ = 牛窝子 Niúwōzi, DY = 大洋 Dàyáng, TB = 桃巴 Táobā, LP = 兰坪 Lánpíng, QH = 箐花 Qìnghuā, JL = 九龙 Jiǔlóng), c. = Tangut. Forms with non-expected tonal correspondences are placed in braces. Cognate portions of longer forms are bolded. Brackets around a pre-Tangut form indicate that the form is not found in Jacques 2014, but is derived using Jacques' (2014)

[10] Though, the comparisons of Prinmi and Tangut, as well as Tangut with Rgyalrong in Jacques 2006, 2014 provide a useful starting point for understanding potential correspondences.

methodology. Supporting evidence for these forms is given in footnotes. Within each sub-section, the data are organized first by the tonal correspondence and then by the place and manner of the syllable onset.

4.4.1 Rma – Prinmi correspondence sets

We begin with the forms which are cognate between Rma and Prinmi but which do not have apparent cognates in Tangut. Examples (1-20) show a correspondence between Rma H and Prinmi H.

(1) #2153 'bloom'
a. LX tə́ pá, {MC pɛ̀}, YH tə́-pá
b. QH tə^{55} pɐ^{55}

(2) #0075 'blow'
a. LX p^{h}ú, MC p^{h}ú, {TP p^{h}ə^{33}}, YH **p^{h}ú** tɛ̀
b. LP **p^{h}u^{55}** py^{55}

(3) 'open'
a. LX tə́ **p^{h}é** 'open (eye)', MC p^{h}ɤ̀, TP p^{h}ʐa^{55}
b. TB k^{h}ə^{35} **p^{h}a^{53}**, LP t^{h}ə^{13} **pʃɑ^{55}** 'split open, rend', JL k^{h}ɯ^{11} **p^{h}o^{55}**

(4) #3629 'dragon'[11]
a. LX bú, MC bú, TP χbə^{241}
b. TB bʐo^{55}

(5) 'harvest / reap'
a. MC kú ~ kù, YH ɦɛ̀ **kwɛ́**
b. LP xə^{13} **kɯ^{55}**, JL **kɯ^{55}** ʐɐ^{55}

(6) 'fight / go to war'
a. LX qù **quá**, MC dʐuɛ̀ **quá**, YH dʑɛ̀ **quá**
b. LP qo^{55} **quɑ^{55}**

(7) 'life'
a. LX tsɨ́
b. LP tsi^{55} 'lifespan', {JL tsi^{35}}

(8) #0370 'beard'
a. TP **ts^{h}uə^{55}** χmə^{33}, YH **ts^{h}ɤ́** mù
b. TB a^{35} **sõ^{53}**, QH a^{13} **stiɑ̃u^{55}**, JL a^{33} **sũ^{55}**

(9) #2763 'chop'
a. LX **ts^{h}uá** dà, MC **ts^{h}oú** tià, TP **ts^{h}uɑ^{55}**, YH **ts^{h}wá** tɛ̀
b. QH t^{h}ə^{13} **stʃɑ^{55}**, LP t^{h}ə^{13} **ʃtʃɑ^{55}**

(10) 'narrow'
a. LX tɕ^{h}á, {TP tɕ^{h}e^{33}}
b. TB **ʂə^{55}** mə^{53}, LP ʃtʃə^{55}, QH stʃə^{55}, JL tɕ^{h}y^{11} tɕ^{h}y^{55}

(11) 'stab'
a. LX tɕ^{h}í, MC ts^{h}oú
b. LP **ts^{h}u^{55}** ~ xə^{13} **tɕ^{h}u^{55}**

[11] Possibly loans from Tibetan འབྲུག་ *'brug* 'dragon' (Evans 2001b: 96).

(12) ‘rinse / flush’
a. MC tʂʰuá
b. LP tʃʰõ**⁵⁵**

(13) ‘direction’
a. YH dʑí
b. WD dʑí

(14) #2745 ‘clear / clean’
a. LX ɕó, MC, **ɕó** tè
b. WD ʂő, NWZ ʂõ^{H}, TB **ʂã⁵⁵** n̥iɛ⁵⁵ mə⁵³, QH, **ʂõ⁵⁵** ne⁵⁵, JL ʂɑ̃⁵⁵

(15) ‘learn, teach’[12]
a. LX só, MX soú, TP tə^{13}-**sy**^{55}, YH ɕwí ‘teach’
b. WD swé, NWZ **suᴴ** sɥɛ̃^{L} ‘teach’, DY swí ‘teach’, TB xə³⁵ **suẽ⁵³** LP **sy⁵⁵** syɛ̃¹³, QH xə¹³ **syɛ̃⁵⁵**, JL suɛ̃⁵⁵

(16) #1005 ‘raw’
a. TP ʂe^{55}
b. TB **sə⁵⁵ sə⁵⁵** mə⁵³, QH sə⁵⁵ sə⁵⁵, LP sə⁵⁵ sə⁵⁵

(17) ‘obstruct’[13]
a. YH ɦæ̀-**ʑwǽ**
b. WD è-**ʐ̩wí**, LP kʰə^{13} **ʐ̩a⁵⁵**, JL xa^{11} **ʐ̩o⁵⁵**

(18) #2221 ‘delicious’
a. MC ʑé, YH zí
b. WD ʐ̩**ő**, NWZ ʒĩ^{H}, TB **ʐ̩ẽ⁵⁵** mə⁵³, LP **ʒẽ⁵⁵** ti⁵⁵, QH **ʐ̩ə̃⁵⁵** ti¹³, {JL ʑĩ³⁵}

(19) ‘soup’
a. MC ʐ̩é
b. {DY rǎ}, TB rɛ̃⁵⁵, LP ʂɑ^{13} **ʐ̩ɑ̃⁵⁵**, QH ʂɑ^{13} **ʐ̩ɑ̃⁵⁵**

(20) ‘sit on/hatch (egg)’
a. MC né ‘hatch, brood’, TP χne^{55}
b. TB tə^{55} **ŋ̍i⁵³** QH tə^{55} **ŋ̍i⁵⁵** ‘lay egg’

The following examples, (21-40), show a correspondence between Rma L and Prinmi L.

(21) ‘warm self by fire’ (first syllable is ‘fire’)
a. LX **mù lé**
b. TB **ma³⁵ liã⁵⁵**, QH **mɐ¹³ lɛ̃⁵⁵**, LP **mɐ¹³ lɛ̃⁵⁵**, JL **ma³⁵ ɬə̃⁵⁵**

(22) ‘cat’
a. LX **mà**{ŋ̍ù}, LX **mè** {ŋ̍òu}, TP **ma³¹** ŋ̍y⁵⁵, YH **mæ̀** ŋ̍wí
b. NWZ **mɜ^{L}** tsɨ^{R}, TB **mɐ³⁵** tsə⁵⁵, QH **mɐ¹³** tsə⁵⁵, JL **mu¹¹** ŋ̍i⁵⁵

(23) #2472 ‘mushroom’
a. LX **mə̀** ɚ̀, MC **mò** tsú ~ **mɛ̀** ʐ̩ú, TP **mɑ³¹** ʐ̩u³³, YH **mù** xí
b. WD **mǐ**, DY **m**rɛ̌, TB **mi³⁵**, LP **m**ʐ̩i^{13}, QH **m**ʐ̩i^{13}, JL **mỹ³⁵**

[12] Possibly from Chinese 学 xué ‘study’.
[13] This word is an alternating verb in WD.

(24) ‘plow (n.)’
a. LX tò, MC **tò** kè, YH **tù** kwǽ
b. {LP tɑ̃u^{55}}, JL tũ^{35}

(25) #2252 ‘owl’
a. LX ỳ **k^{h}ù**, MC kuì tòŋ **k^{h}ò**, YH mǽ **k^{h}wì**
b. JL k^{h}ɑ̃^{35}

(26) ‘stone’
a. LX gò
b. WD **gù** ɖóŋ, NWZ **gu^{L}** bõ^{H}, LP zgø^{13}, QH sgø^{13}, JL **guo^{11}** lũ^{55}

(27) ‘answer, reply (v.)’
a. LX guà, TP χgye^{33}
b. LP tə^{13} **gui^{35}** ski^{55}

(28) #2154 ‘left’
a. MC guì ‘left (hand)’, TP χgy^{33}, YH **wà^{1}**-tɕ^{h}á ‘left-side’
b. SL we L, WD wĕj, LP uɑ^{13}, QH uɑ^{13}, JL we^{35}

(29) ‘bundle’
a. LX què, MC quà
b. JL (tə^{55}) **qã^{11} ‘**bunch / bundle’

(30) #5641 ‘gnaw’[14]
a. LX **ʁà** ɕà, TP **χɢɑ^{241}** ɕe^{33}, YH **gù^{1}** ɬé
b. WD qǎ, DY χqǎ ‘bite’, QH xə^{13} **qɑ^{13}**

(31) ‘tread’
a. LX **tɕ^{h}uà** ɳí, MC tɕ^{h}yà, TP tɕ^{h}ya^{31}, YH **ts^{h}wæ̀** ɳwí
b. {TB nə^{35} **tɕ^{h}o^{55}}**, LP nə^{13} **tʂ^{h}ɯ^{13}**, QH nə^{13} **tʂ^{h}ɯ^{13}**

(32) #0615 ‘sweat’
a. {MC tʂ^{h}ù}, TP χtʂuə^{55}, YH tɕ^{h}wí
b. DY ʃtʃ^{h}í, LP sk^{h}i^{55}, QH sk^{h}i^{55}

(33) ‘nephew’
a. LX **dʑì** q^{h}uá, MC dʑì, TP dʑi^{31}
b. NWZ dju^{R} ‘nephew, paternal’, DY dyŭ, TB diu^{35}, LP diu^{13}, QH diu^{13}

(34) #0045 ‘lean (of meat)’[15]
a. TP dʐo^{241}
b. TB **dʐɐ^{35}** mə^{53}, QH **dʐə^{13}** ti^{55}

(35) ‘lock’[16]
a. MC ʂuà, TP qɑ^{55} **suɑ^{31}**
b. LP sɑ^{13}, QH sɑ^{13}

[14] The WD ‘gnaw’ is only found in an example sentence in Daudey 2014:441. Thus, my grouping of it as /L/ is tentative.

[15] Táopíng 241 is sometimes a reflex of *H and sometimes a reflex of *L. Without supporting evidence from other Qiang varieties, this set is speculative.

[16] Possibly from Chinese 锁 *suǒ* ‘lock’.

(36) 'easy'
a. TP zie^{31}, MC (pù) zè, YH zǎ
b. TB ʑe^{35} ʑe^{55} mə^{53} LP ʃtʃɛ^{13} ʃtʃɛ^{55}, QH stʃɛ^{13} stʃɛ^{13}, JL dʑə^{35} dʑə^{35}

(37) 'give birth'
a. LX ì, MC ʑì
b. WD ʑì

(38) #0449 'to exist'[17]
a. LX jì, MC ʑì, TP ʒl^{33}
b. WD ʑǐ, TB ʑɛ^{35}, LP ʒø^{13}, QH ʒø^{13}, JL ʑe^{35}

(39) #0671 'hail (n.)'
a. LX dà **zì** 'snow, hail (v.), YH pǒ-**ʐi̱** lwìlwí 'hail' (lit. snow-hail + round)
b. TB ʑẽ^{35}, JL zẽ^{35}

(40) #1716 'yawn'[18]
a. LX **hà há** pù, MC **χà** pú
b. WD **hù** ɕə̀, JL **xɑ^{11}** xe^{11}

4.4.2 Rma – Tangut correspondence sets
Next, we examine forms which are possibly cognate between Rma and Tangut, but have no apparent Prinmi cognates. Examples (41-47) suggest a correspondence between Rma H and Tangut tone 2.

(41) '*shìbi*'[19]
a. LX sɨ̀ **pí** 'priest', MC pí 'priest', YH ɕwì **pí**
c. 𗍫 3280 pja̱ 2.57 < *[S-pj-] 'sorcerer'

(42) 'be thirsty'
a. {LX tsù tə-**pià}** 'water directional-thirst', {MC pià}, TP χpa^{55}, YH tə-**pǽ** ~ tə-**ɸǽ**
c. 𗖵 4532 pa̱ 2.56 < *C-S-pja

(43) 'rice (raw)'[20]
a. YH k^{h}ə́^{ɪ} ~ q^{h}ə́^{ɪ}
c. 𗅲 5868 k^{h}ie 2.8 < *k^{h}e

(44) 'cough'
a. LX **ts^{h}ú** tá, YH tə-**ts^{h}ú**
c. 𗖛 4615 tsu̱ 2.51 < *S-tso

(45) 'enclose'
a. LX tɕ^{h}ý 'enclose (sheep)', MC k^{h}uí 'enclose (sheep)', YH tɕ^{h}wí
c. 𗿋 2758 k^{h}wa 2.14

[17] The WD form carries a rising tone in isolation but has a falling tone when prefixed (Daudey 2014:298 fn. 308).
[18] These forms should perhaps be discarded as they are sound symbolic. It is also possible that they are independent borrowings from Chinese 哈欠 *hāqian* 'yawn' (also sound symbolic). The second syllable in the Prinmi forms probably means 'release'.
[19] 释比 *shìbǐ* is the Chinese transliteration of the Rma term. This pre-Tangut reconstruction follows Gong's law (Gong 1999; Jacques 2014:25). There is a similar Tangut form, 𗍫 3439 pji̱j^{1} < *S-pjej 'magician, healer', which has the opposite tone (Jacques 2014:168).
[20] See Jacques 2014: 112 ft. 34 for a discussion of this form.

(46) 'live'[21]
a. LX sú
c. 徥 2048 sjwụ 2.52 < *S-sjo, also written 0487 𣐈 sjwụ 2.52

(47) 'owl'
a. YH **mǽ** k^{h}wì
c. 貓 2656 mej 2.30

Examples (48-54) suggest a correspondence between Rma L with Tangut tone 1.

(48) 'plate, dish'
a. TP be^{33}
c. 𧗊 3697 bji 1.11 < *[mbje]

(49) 'drum'
a. LX bù, MC bù, TP χbu^{33}
c. 𧰼 5528 bar 1.8 < *r-mba$^{\text{ɣ}}$ŋ

(50) 'overflow'
a. TP bə^{33}
c. 靡 0190 bji 1.30 < *[mbj-] / 弭 0461 bju 1.3 < *[mbj-]

(51) #2465 'dark'
a. LX ɦà-**mù**, MC mò, TP mu^{33}
c. 祄 3925 mur 1.75 < *r-m- 'darkness'

(52) 'people, clan'[22]
a. LX mà, MC mà, TP χma^{33}, YH mǎ^{ɪ}
c. 𣱵 0607 mjɨr 1.86 < *[r-m-] 'people; clan'

(53) 'feed, raise'
a. LX mì, MC mù, YH mǐ
c. 𥘅 4542 mji 1.11 < *mej

(54) 'wound (n.)'
a. LX qò **mì**,
c. 𣰰 5628 mjạ 1.64 < *S-mjat 'wound, scar'

(55) 'hold'[23]
a. LX toù 'hold (in arms)', MC ɦà **tòu** 'hold closely', TP χtu^{33} 'hold (baby) in arms'
c. 𣍐 5486 tẹ 1.68 < *[S-tv]

(56) #1352 'female genitalia'
a. LX **t^{h}à** bá 'vulva', TP **t^{h}ɑ^{31}** bɑ^{33} 'buttocks'
c. 𩦋 5518 t^{h}wị 1.69 < *S-t^{h}u 'vagina'

(57) #0251 'heart'
a. LX **ȼì** mì, MC **tiè**, {TP **χtie^{55}** mə^{55}}, YH **tì** mí ~ **t^{h}ì** mí
c. 𣏌 2518 njiij 1.39 < *njeeN

[21] See Jacques 2014: 52 for discussion of this form.
[22] The Rma forms are autonyms. The pre-Tangut form follows Nishida's law.
[23] Possibly borrowed from Chinese 牌 *pái* 'plate'. Thanks to an anonymous reviewer for pointing this out.

(58) 'solid, durable'
a. LX gù
c. 熾 2472 gjwɨ 1.30 < *ŋgut

(59) 'soldier'[24]
a. LX guà, MC dʑyè, TP dʐue^{241}
c. 霧 1531 gja 1.20 < *[ŋgjaC]

(60) #3333 'tail'[25]
a. LX **suà** kà, MC **suà** kè, YH **sù** kjɛ́
c. 芮 4095 sji 1.11 < *[swa]

(61) #3559 'seed'
a. LX dzueì, MC zuì 'pit, stone; bullet', TP **zuə^{31}** zɑ^{241}
c. 緌 3164 zjwɨ 1.30

(62) 'vapor'
a. LX lə, MC lè
c. 翳 3299 lwew 1.43

(63) #0695 'hand'
a. TP **lɑ^{31}** χɑ^{55} pi^{33} 'shoulder'
c. 肄 3485 la 1.63 < *s-lak

4.4.3 Prinmi – Tangut correspondence sets

Next, we examine forms which have no attested reflexes in Rma, but which are cognate between Tangut and Prinmi. Given what we have seen thus far, we would expect Prinmi H and L to correspond with Tangut tones 2 and 1 respectively. Examples (64-73) suggest a correspondence between Prinmi H and Tangut 2.

(64) 'wide / broad'
b. WD pú H, DY ɸpə́w, TB **po^{55}** mə^{53}, LP fpo^{55}, QH spo^{55}, JL po^{55}
c. 緐 3310 wạ 2.56 < *[S-pv] 'vast, wide, extensive'[26]

(65) 'leaf'
b. {WD pǎ}, NWZ sɜ^{L} **pɑ^{H}**, TB pa^{35}, LP sɐ^{13} **fpɑ^{55}**, QH sɐ^{13} **spɑ^{55}**, JL pɑ^{55}
c. 嚩 4567 bạ 2.56 < *S-mbak

(66) #5646 'untie'[27]
b. NWZ p^{h}ɹə^{H}, TB t^{h}ə^{35} p^{h}ʐə^{53}, QH t^{h}ə^{13} p^{h}ʐɯ^{55}
c. 毅 5390 p^{h}ie 2.8 < *p^{h}re

(67) #5556 'throw'[28]
b. JL nə^{11} p^{h}ə^{55}, nɑ^{11} p^{h}ɑ^{55} 'throw out'
c. 懿 2719 p^{h}ə 2.25 'throw, abandon'

[24] cf. Tangut 氉 1907 gju^{2} < *ŋgjo 'tendon'.
[25] STEDT #3333 only includes the Qiang form.
[26] This pre-Tangut reconstruction follows Gong's law (Gong 1999; Jacques 2014:25).
[27] This Tangut form is missing from STEDT #5646. STEDT includes Táopíng /ʐù/ 'untie' which may not be cognate, since Táopíng generally retains *pr clusters (cf. pʐi^{55} 'white', p^{h}ʐi^{33} 'to tear').
[28] This Tangut form is not listed in STEDT #5556.

(68) 'sun'
b. WD bú, NWZ bɨ^{H}, TB bɯ^{53}, LP by^{55}, QH by^{55}, {JL bi^{35}}
c. 𗅁 2449 be 2.20 < *mbe

(69) #5713 'duck'[29]
b. WD bǽ, NWZ ba^{H}, {TB ba^{35}}
c. 鸂 3301 bə 2.25 < *[mbv] 'mandarin duck'

(70) 'sheep'
b. NWZ t^{h}u^{H} 'sheep, male; ram'
c. 𗾞 5716 t^{h}u 2.1

(71) 'blind'
b. {WD qŭ}, NWZ ku^{H}
c. 𗍫 0328 ku 2.4

(72) #2531 'green, blue'[30]
b. WD ní 'red, unripe, green, blue', NWZ ni^{H}, TB **ŋi^{55}** na^{55} mə^{53}
c. 𗗙 0654 ŋwər 2.76 < *rŋwv 'dark green'

(73) 'lamb kid'
b. LP ʒɑ̃u^{55} **li^{55},** JL **ji^{55}** tsɻ^{55}
c. 𗶒 5987 ljij 2.55 'lamb, kid'

Examples (74-89) suggest a correspondence between Prinmi L and Tangut 1.

(74) 'half'
b. WD p^{h}ă, NWZ p^{h}ɑ^{R}, TB p^{h}a^{35}, {LP **p^{h}a^{55}** tɕi^{13}}
c. 𗰜 3936 p^{h}a 1.17 < *p^{h}ak

(75) 'butterfly'
b. LP p^{h}ɑ^{13} lɑ^{55}, QH p^{h}ɑ^{13} lɑ^{55}
c. 𗵘 0538 pja 1.20 < *S-pja

(76) 'fly'[31]
b. WD bĭŋ, NWZ bjɛ̃^{R}
c. 𗥤 2262 dźjow 1.56 < *mbjvm

(77) #0503 'blow'
b. WD m̥ə̀, NWZ m̥u^{R}, DY m̥ə̌, TB xə^{35} **m̥ə^{35}**, LP k^{h}ə^{13} **m̥ə^{13}**, JL mo^{35}
c. 𗥃 2128 məə 1.31 < *mvvt

(78) #3560 'tail'
b. DY {**mə́**} łyé, TB **mɛ̃^{35}** łio^{53}, LP **mɐ^{13}** łiɛ^{55}, QH **mɐ^{13}** łiɛ^{55}, JL **mã^{35}**
c. 𗹦 5677 mjiij 1.39 < *mjeej

(79) 'choke'
b. TB xə^{35} **tui^{35}**
c. 𗣼 4016 tjwi 1.11

[29] cf. Tangut 𗅁 2449 be^{2} < *mbe 'sun'.
[30] As an anonymous reviewer pointed out, the form 0257 𗍊 ŋwər 1.84 is far more common in texts and has the unexpected tone.
[31] See Gong Xun (to appear) for a discussion of this Tangut form.

(80) 'shoe'
b. TB tɕyi^{35}, LP tsyi^{13}, QH tsyi^{13}, JL tsui^{35}
c. 𗍫 1321 zjị 1.67 < *C-S-tsja

(81) #0418 'joint'
b. DY tɐ-tsə̆j, DY tsă, {LP tsi^{55}}, JL tsɛi^{35}
c. 𗴂 4739 tswer 1.87 < *r-tsvk

(82) #3586 'feed'[32]
b. NWZ ʈʂ^{h}e^{R}, LP t^{h}ə^{13} stʃ^{h}ɛ^{13}
c. 𗖵 4582 tjị 1.67 < *[S-trv]

(83) #3604 'bridge'
b. NZW dzõ^{R}, TB dzã^{35}, LP dziɑ̆u^{13}, QH dziɑ̆u^{13}, JL dzã^{35}
c. 𗥤 2584 dzow 1.54 < *ndzvm

(84) 'heavy'
b. WD lɛ̀j
c. 𗏁 2737 ljɨɨ 1.32

(85) #3560 'seed'
b. WD lə̆j, TB le^{35}, {LP la^{55}}, {QH la^{55}}, JL lɛi^{35}
c. 𗾞 5819 ljwi 1.11

(86) #0392 'forehead'[33]
b. NWZ l̥o^{R}, DY łŏ, TB ło^{35}, LP ło^{13}, QH ło^{13}
c. 𗍑 0791 ljạ 1.64 < *S-lja

(87) 'graze (v.t.)'
b. NZW l̥i^{R} 'shepherd (v.)', TB ɬi^{35}
c. 𗣼 0993 l^{h}ew 1.43 < *l^{h}vk

(88) 'obtain'
b. WD ɻĭ, NWZ ri^{R}
c. 𗘂 1599 rjir 1.79

(89) #0231 'bowl'
b. WD q^{h}wă, NWZ k^{h}wɑ^{R}, TB k^{h}ua^{35}, LP k^{h}uɑ^{13}, QH k^{h}uɑ^{13}
c. 𗦇 4189 k^{h}u 1.4 < *k^{h}o

4.4.4 Rma – Prinmi – Tangut correspondence sets

Next, we turn to the forms which have possible cognates in all three subgroups. Examples (90-117) suggest a regular correspondence between Rma H, Prinmi H, and Tangut 2.

(90) 'pretend'[34]
a. MC **pá** pù 'pretend, feign', YH ɸáˈ ~ fáˈ
b. WD pɯ́ 'to do', NWZ pɑ^{F} 'to do'
c. 𗍊 1498 wjị 2.60 < *C-S-pja

[32] This pre-Tangut reconstruction follows Gong's law (Jacques 2014: 25).
[33] STEDT #0392 includes only the Prinmi forms. The cognancy of the Tangut form is my own suggestion.
[34] I believe the semantics of these forms is comparable cf. English 'pretend' ~ 'act' ~ 'do'.

(91) 'tree'[35]
a. {LX ɐì **pʰù}**, MC pʰò ~ pʰó, TP pʰo^{55}, YH pʰú
b. WD bóŋ, LP siɛ̃^{13} vbõ$^{\mathbf{55}}$, QH siɛ̃^{13} sbõ$^{\mathbf{55}}$, JL sɛ̃^{11} bũ$^{\mathbf{55}}$
c. 肴 5814 pʰu 2.1 < *pʰoN

(92) #2253 'flee'[36]
a. LX dà **pʰó**, TP pʰu^{55}, YH dò **pʰú**
b. {WD pʰ̀ĭ}, {NWZ pʰjɛ̃^{R}}, {DY ptʃʰ̌ĭ}, LP kʰə^{13} **pʰʃã$^{\mathbf{55}}$**, QH pʰʒã$^{\mathbf{55}}$, JL pʰã$^{\mathbf{55}}$
c. 絳 2451 bọ 2.62 < *S-mb-

(93) #2450 'name'
a. LX zə mú, TP χmə^{55}, YH mə́^{1}
b. SL mɛ́N, WD mǽ, NWZ mɑ̃^{H}, DY mɑ̃́, TB mɛ̃^{55}, LP ma^{55}, QH ma^{55}, {JL mã^{35}}
c. 緲 2639 mjiij 2.35 < *mjeej

(94) #5656 'cloud'[37]
a. LX **dá** mù, MC **dá** mò, {TP χde^{33}}, YH dá
b. NWZ dĭ^{H}, DY zdĭ́, LP zdĭ^{55}, QH sdĭ^{55}, {JL dɛ̃^{35}}
c. 颯 2738 djɨj 2.55 < *s-ndim

(95) #2312 'weigh'[38]
a. LX tɕʰì tɕʰí 'weight (grain)', MC tɕʰé 'weigh (grain)', TP tɕʰe$^{\mathbf{55}}$ 'weigh'
b. TB tə$^{\mathbf{55}}$ **tɕɛ$^{\mathbf{53}}$** 'weigh' LP tə$^{\mathbf{55}}$ **tɕi$^{\mathbf{55}}$** 'weigh (food)', JL tɯ$^{\mathbf{55}}$ **ke$^{\mathbf{55}}$** 'weigh (food)'
c. 弼 0909 kạ 2.56 < *[S-kv]

(96) 'separate (v.)'
a. LX **qá** tsʰé 'separate, sever', MC kiè **ká** 'separate, sever'
b. LP xə^{13} **kʰe$^{\mathbf{55}}$**, JL kʰə^{11} **kʰe$^{\mathbf{55}}$** nə^{11} ʃĭ^{11}
c. 薎 4480 kar 2.73 < *r-kat

(97) #5677 'strength'
a. {LX qú}, MC dzą̀ **qà**, TP dzɻ^{241} **qɑ$^{\mathbf{33}}$**, YH qŭ ~ kŭ
b. WD qĕ, TB ka^{35}, LP qa^{13}, QH qa^{13}
c. 緩 3440 ka 1.17 'power, authority'

(98) 'cuckoo'
a. LX qí pù, MC koú pù
b. WD qí pù LP qei$^{\mathbf{55}}$ pu^{13}, {JL kɯ^{11} pu$^{\mathbf{55}}$}
c. 頒 2208 ɣjiw 2.40

(99) #1612 'house'
a., LX **tɕé** kù, MC tɕí, TP **tɕi$^{\mathbf{55}}$** ko^{33}, YH tɕí
b. WD tʃő, NWZ tʃĭ^{H}, TB tɕə̃^{55}, LP tʃə̃^{55}, QH tʃə̃^{55}, {JL tɕĭ^{35}}
c. 牖 2560 jɨj 2.37

(100) 'stretch'
a. LX tsʰí, MC {tʂʰɨ̀} ~ tʂʰɨ́, TP sɻ^{31} **tʂʰi$^{\mathbf{55}}$**, YH hə-**tʂʰə́**
b. LP kʰə^{13} **ʃtʃõ$^{\mathbf{55}}$**, QH kʰə^{13} **stʃõ$^{\mathbf{55}}$**, JL kʰɯ^{11} **ʂã$^{\mathbf{55}}$** la^{11}
c. 羆 5209 .jị 2.60 'uphold, stretch'

---

[35] The low tone in LX may be because it occurs as part of a compound in which the first syllable is 'wood'.
[36] This verb is an alternating verb in WD (Daudey 2014:110).
[37] The TP form is irregular, but this may due to a voicing conditioned tone split (see Kirby 2001). See Jacques 2015 for a discussion of this word.
[38] This Tangut form may be a loan from Tibetan སྐར་ *skar* 'to weigh' (Jacques 2014:141)

(101) 'be sour'
a. YH tswɛ́
b. WD ʈʂú, NWZ ʈʂu^{H}, DY tʃú
c. 𗍫 2739 tś^{h}jwɨr 2.77

(102) #0227 'gall'
a. LX tsɨ́, MC tɕɨ́, TP χtʂə^{55}
b. WD ʈə́, NZW k^{ɹ}ə^{H}, TB tʂə^{55}, LP tʂə^{55}, QH tʂə^{55}, {JL tʂɿ^{35}}
c. 𗑠 3582 kjɨr 2.85 < *S-krvvt

(103) #2536 'silver'
a. LX ŋú, MC ŋó, TP χŋu^{55}, YH wú
b. WD ŋǒ, NWZ jõ^{H}, DY ŋoǘ, TB ŋõ^{55}, LP ŋãu^{55}, QH ŋãu^{55}, {JL ŋ̃ɯ̃^{35}}
c. 𗅋 3572 ŋwo 2.42

(104) #1104 'weep'[39]
a. LX ŋú, TP ŋə^{55}
b. WD qwé, NZW kwɜj^{H}, TB xue^{55}, LP χquɑ^{55}, QH squɑ^{55}, JL kuɛ^{55}
c. 𗥃 3388 ŋwu 2.1

(105) #2414 'flea'
a. TP tsu^{55} lu^{55}
b. WD l̥ɛ́j, NWZ l̥ɜj^{F}, TB łe^{53}, LP ła^{55}, QH ła^{55}, JL łɛi^{55}
c. 𗗙 4565 lə 2.25 < *li

(106) #5577 'wait'
a. YH ʑì lwí
b. LP xə^{13} **liõ^{55}** ku^{55}
c. 𗾞 5522 ljiij 2.35 < *ljaaŋ

(107) #0572 'shit'
a. {LX ts^{h}ə̀}, MC tɕ^{h}ɛ́, TP tʃ^{h}ɿ^{55}, YH ʂɨ
b. SL xei HL, NWZ kɜj^{F}, DY χqá, TB xe^{53}, LP xqa^{55}, QH sqa^{55}, JL qɛi^{55}
c. 𗍊 2059 l^{h}jɨ 2.60

(108) #5632 'who'[40]
a. LX sɨ, MC ʂí lè, TP sɨ^{55}, YH sɨ
b. WD hî, NWZ **xɜ^{H}** gə^{L}, TB xɛ^{53}, LP xɛ^{55}, QH xɛ^{55}
c. 𗹦 0432 sjwɨ 2.28 < *su

(109) #0034 'meat / flesh'
a. TP tʃ^{h}ɿ^{55}
b. NWZ ʂɨ^{F}, DY ʃtʃɨ, TB ʂə^{53}, LP ʃɤ^{55}, QH ʃɤ^{55}, JL ʃi^{55}
c. 𘜶 2385 śju 2.2

(110) 'deity'[41]
a. LX tɕ^{h}ɨ́, MC sé, {TP ts^{h}ie^{33}}, YH sɨ
b. WD hí, NWZ xe^{H}, DY ɕé, LP **ɕe^{55}** tʃə̃^{55} 'temple', QH **ɕe^{55}** tʃə̃^{55} 'temple'
c. 𗥤 4953 sji 2.10

---

[39] Daudey (2014:184) notes that WD [qw-] is a regular reflex of *ŋw.

[40] Note, however that the by far most common word for 'who' in Tangut is 0441 𗹨 sjwɨ 1.30, with the opposite tone. Thanks to an anonymous reviewer for pointing this out.

[41] The second syllable in LP and QH is 'house'.

(111) #1390 'liver'
a. LX ɐí ɹá, {MC sè}, TP sie^{55}
b. WD tswé, NZW tsɥɛ̃^{F}, {DY tswǐ}, TB tsuẽ$^{\mathbf{53}}$, LP tsyɛ̃$^{\mathbf{55}}$, QH tsyɛ̃$^{\mathbf{55}}$, {JL tsu$^{\mathbf{35}}$}
c. 祗 5273 sji 2.10 < *sje < *sjeN

(112) #5658 'dance, jump'
a. LX **ts^{h}ó** tà, MC soú, TP **ts^{h}u$^{\mathbf{55}}$** ta^{55}, YH **sú** tɛ̀
b. WD ts^{h}ú, NWZ ts^{h}o^{F}, {TB dʑɛ^{35} **ts^{h}o$^{\mathbf{35}}$**}, LP xə^{13} **ts^{h}o$^{\mathbf{55}}$**, QH ts^{h}a^{55} **ts^{h}o$^{\mathbf{55}}$**, JL tɕɯ^{55} **ts^{h}ə$^{\mathbf{55}}$**
c. 踋 3788 tsu 2.1 'stand up, rise, jump'

(113) #3591 'sit down'[42]
a. LX ɦà zú, MC dzó, {TP dzo^{33}}
b. WD nà **dző**, NWZ dzõ^{H}, TB nə$^{\mathbf{35}}$ **dziã$^{\mathbf{55}}$**, LP nə^{13} **dziɛ̃$^{\mathbf{55}}$**, QH nə^{13} **dziɛ̃$^{\mathbf{55}}$**, JL nə$^{\mathbf{55}}$ **dzə̃$^{\mathbf{55}}$**
c. 蹙 2396 dzuu 2.5 < *ndzoo

(114) #1011 'be long'
a. LX dʐé, MC dʐé, {TP dʐe^{33}}, YH dʐí
b. WD ɻǽŋ, DY ʂǎ, TB ʂã^{55} mə^{53}, LP ʂã^{55}, QH ʂã^{55}, JL ʂã^{55}
c. 緧 2858 zjir 2.72
(115) #1214 'front'[43]
a. TP qə^{31} əɪ^{55}, YH kə̌^{ɪ} ~ qə̌^{ɪ}
b. WD ɹə́, NWZ ɹə^{F}, LP ʐə^{55}, QH ʐə^{55}
c. 刻 0567 rjir 2.72 < *rje

(116) 'snake'[44]
a. MC bʐě
b. WD bʉ **ɻɛ́j**, TB bɐ$^{\mathbf{35}}$ re$^{\mathbf{53}}$, LP bɐ^{13} ʐɑ, QH bɐ^{13} ʐɑ$^{\mathbf{55}}$, JL bu^{11} ʐɛi$^{\mathbf{55}}$
c. 祇 0080 p^{h}io 2.43

(117) #6028 'sheep'
a. LX ió, MC ioú
b. WD ʐő, NWZ ʐõ^{H}, DY zʒoǘ, TB ʐã$^{\mathbf{55}}$, LP ʒɑ̃u$^{\mathbf{55}}$, QH ʒɑ̃u$^{\mathbf{55}}$, {JL ʒõ$^{\mathbf{35}}$}
c. 嶸 3452 .jij 2.33 < *jaŋ

Having examined the correspondences for the high tones. We now turn to the sets with low tones. Examples (118-180) suggest a correspondence between Rma L, Prinmi L, and Tangut 1.

(118) 'year'
a. LX pù, MC pù, TP pə^{33}, YH ə́-pù 'one year'
b. WD pù, DY pɨ, TB pʊ$^{\mathbf{53}}$, LP pə^{13}, QH pə^{13}, {JL pi^{53}}
c. 隖 2712 wji 1.10 < *C-pja

(119) #1006 'pig'
a. LX pià, MC pià, TP pa^{33}, YH pǎ
b. WD tɕ^{h}wǎ, NZW tʃ^{h}ɥɑ^{R}, DY tʃ^{h}ɥǎ, TB tɕyɛ$^{\mathbf{35}}$, LP p^{h}ʃɑ^{13}, QH p^{h}ʒɑ^{13}, JL tɕyə$^{\mathbf{35}}$
c. 豵 0294 wa 1.17 < *C-pak

[42] LX ɦà zú 'sit' is missing from the STEDT set #3591, as are the Prinmi forms.
[43] STEDT #1214 only includes the Prinmi forms. In TP the first syllable is 'head'. The YH form appears to have undergone syllable coalescence: L-H → [LH].
[44] The MC form is coalesced: L-H -> LH. Thanks to an anonymous reviewer for pointing out the cognate Tangut form.

(120) #1293 'pus'
a, LX pù, MC pù
b. DY ɸpɨ̌, LP fpy^{13}, QH spy^{13}, {JL pu^{55}}
c. 䘏 5274 pạ 1.68 < *S-pu

(121) #2548 'patch (v.)'
a. LX **pà** qó 'patch (n.) MC **pɛ̀** tʂʰì 'patch (n)', TP **χpe^{33}**
b. DY NWZ p^{h}e^{R}, DY ɸp^{h}yě, TB xə^{35} **p^{h}iɛ^{35}**, LP xə^{13} **fp^{h}ɛ^{13}**, QH xə^{13} **sp^{h}ɛ^{13}**, JL **p^{h}a^{11}** la^{11} de^{35}
c. 媲 3136 pjạ 1.64 < *S-pja

(122) 'splash / sprinkle'
a. LX p^{h}à, MC (tsuɛ̀) p^{h}ɛ̀
b. LP pʂɛ̃^{13}, {JL pzɛ̃^{55}}
c. 殢 4652 p^{h}ər 1.84 < *[prv]

(123) #2583 'price'[45]
a. LX p^{h}ù, MC p^{h}ɛ̀, TP p^{h}ə^{33}
b. SL p^{h}ŭ, WD p^{h}ŭ, NWZ p^{hɹ}ʉ^{R}, DY p^{h}ŭ, TB p^{h}u^{35}, QH p^{h}u^{13}, {JL **p^{h}y^{55}** qo^{55}}
c. 扶 5950 p^{h}ə 1.27 < *p^{h}u

(124) #1145 'spit (v.)'[46]
a. TP p^{h}e^{33}, YH sə́-p^{h}ɛ̀
b. WD p^{h}ɛ̀, NWZ p^{h}e^{R} 'spew', TB p^{h}ø^{35}, LP tə^{55} **fp^{h}ɛ^{13}**, QH tə^{55} **sp^{h}ɛ^{13}**, {JL tɯ^{55} **p^{h}ə^{55}**}
c. 辯 4622 pię 1.66 < *S-pjv

(125) #1409 'deaf'
a. LX ŋ̀ì **bò**, MC **bù**, TP ŋ̀i^{31} kie^{33} **bu^{241}**, YH ŋ́í kwì **bù**
b. WD da **bɔ̃̌**, NWZ bõ^{R}, TB zɐ^{35} **bõ^{35}**, LP zdə^{13} **bõ^{13}**, QH sdə^{13} **bõ^{13}**, {JL zɑ^{11} **bũ^{55}**}
c. 豬 1391 ba 1.17 < *mba^{ɣ}ŋ

(126) #2187 'bee'[47]
a. LX **bù**-iù, MC **bù**-ʑoú, TP **bə^{31}** dʑy^{33}, YH **bù** ʐú
b. {WD **bu** HL}, {NZW **bi^{F}**}, {DY **bí**}, LP **bʒɛ^{13}** tʃə^{55}, JL **bi^{35}** lĩ^{55}
c. 緻 2462 bowr 1.91 < *rmb-

(127) 'hair'[48]
a. LX χù, MC mù, TP χmə^{33}, {TP qə^{31} χmə^{55}}, YH hŭ^{ɪ}
b. WD qhú **m̥æ**, NWZ khʉ^{H} **mã^{L}**, {TB ma^{55}}, {QH ma^{55}}, {LP ma^{55}}, JL mã^{35}, mɛ̃i^{35}, q^{h}uo^{11} mɛi^{35} 'head-hair'
c. 嵬 2600 mjar 1.82 < *[r-m-]

(128) #0676 'to hammer'[49]
a. LX **tuà** liò 'hammer (n.)', MC t**uà** liò 'hammer (n.)'
b. WD tă, TB xə^{35} **ta^{35}**, QH xə^{13} **stɑ^{13}**
c. 刻 5299 ta 1.17

[45] This JL form may be irregular because it appears in a compound.
[46] The JL form may have an irregular tone because it is in prefixed position. In NWZ, this same verb changes tone in prefixed position: p^{h}e^{R} vs. tɜ^{H}-p^{h}e^{H}. Note also that the first syllable of the YH form is the 'downstream' directional prefix and is not cognate with the 'pre-initial' *s- in the Tangut and Prinmi forms.
[47] The Prinmi forms with the high tones may be related to the Tangut form 夔 1888 bə^{2} 'insect, maggot' < *[mbv].
[48] Note the irregularity in Prinmi. The Tangut form occurs in the compound 厥 4543 嵬 2600 mər 1.84 mjar 1.82 'whiskers' (Jacques 2014:169).
[49] Possibly from Chinese 打 dǎ 'hit'. Thanks to an anonymous reviewer for pointing this out.

(129) 'drill (v.)'
a. LX ŋ̀ò 'drill, auger'
b. JL ŋ̀ĩ[11] by[35]
c. 𗍫 4909 nu 1.1 'drill, bore'

(130) 'trip hammer for hulling rice'[50]
a. LX t[h]iò
b. DY ʃtʃĭ 'rice pounder', LP ʃtʃi[13]
c. 𗴲 0868 tsowr 1.91 < *[r-Cv]

(150) #2686 'weave'[51]
a. LX tɕà, MC tià, TP tia[33], YH tǎ
b. WD tɕǎ, DY tʂŏ, TB nə[35] tɕɛ[35], LP tʃɑ[13]
c. 𗍘 0630 la 1.17 < *C-tak

(151) 'small'
a. LX tsù, MC tsù ~ tsú, YH tsə̌
b. WD q[h]ɐ tsə̌j, NWZ kɜ[L] tsɜj[R], TB ka[35] tse[35] mə[53], LP qa[13] tsɛ[13], QH qa[13] tsɛ[35]
c. 𗍊 3798 tsəj[1] < *tsij

(152) #0458 'lung'
a. LX ts[h]ù, MC ts[h]où, {TP ts[h]u[55]}, YH **ts[h]ù**-p[h]á
b. WD ts[h]ŭ, NWZ ts[h]ʉ[R], DY ts[h]ŭ, TB ts[h]ø[13], LP ts[h]y[13], QH ts[h]y[13], {JL ts[h]u[55]}
c. 𗹦 5105 tsə̣[1] < *S-tsvt

(153) #0042 'fat'
a. LX ts[h]ɨ̀ 'fat (of humans)'
b. WD ts[h]ə̀, TB ts[h]ə[35], LP ts[h]ɤ[13], QH ts[h]ɤ[13], JL ts[h]ɭ[35]
c. 𗢭 0984 ts[h]wu[1] < *ts[h]o

(154) #0230 'blood'
a. LX sà, MX sà, TP sa[33], YH sǎ
b. SL sə̌j, WD sɛ̌j, NWZ sɜj[R], DY sǎ, TB se[35], LP sa[13], QH sa[13], JL sɛi[35]
c. 𗏵 2734 sjij 1.36 < *sjej

(155) #2658 'firewood'
a. LX ɐì, MC sè, TP sie[33], {YH sɛ́}
b. WD sə̌ŋ, NWZ sjẽ[R], TB sẽ[35], LP siɛ̃[13], QH siɛ̃[13], {JL sẽ[55]}
c. 𗵘 4250 sji 1.11 < *sjiN (cf. Hill 2015: XX)

(156) 'hemp'[52]
a. LX sò, YH sŭ
b. WD sŭ L, DY sə̆w, LP sɑu[13], JL so[35]
c. 𗍁 2456 se 1.8

(157) 'sharpen, grind'
a. LX sù, MC sù, {TP suə[55]}
b. NWZ su[R], TB k[h]ə[35] **sui[35]** QH k[h]ə[13] **syi[13]**
c. 𗾞 1670 swjij 1.36 'grind, pestle'

---

[50] This pre-Tangut reconstruction follows Nishida's law.
[51] This form is also written as 𗍘 2497 la 2.17 (see Jacques 2014:132).
[52] Guillaume Jacques (p.c.) has suggested that this form is a *Wanderwört* also found in Naic language varieties. Note also the MC compound sà p[h]ié 'hemp'.

(158) #2483 ‘black’
a. LX ŋ́í ~ ŋ̀ì, MC nè, TP **ŋ̍i[55] ŋ̍i[31]**, YH ŋ̍ĭ
b. SL njɛ̆, WD njæ̆, NWZ njɑ^{R}, DY ŋ̍ɑ̆N, TB **ŋ̍ɛ[35]** mə[53], LP ŋ̍a[35], QH ŋ̍ɑ[35]
c. 黓 0176 njaa 1.21 < *njaak

(159) ‘snivel’
a. MC nə̀
b. NWZ ŋ̍ɑ̃^{R}, DY ŋ̍ɑ̆̃ ‘snot’
c. 鼸 5731 nạ 1.63 < *S-nap

(160) #0596 ‘skin’
a. LX **ɹà** pià, MC **ʐ̩à** piá, TP **tʃʰ˩[31]** pa[33], YH **ɦæ̀** pǽ
b. {NZW ɹə^{F}}, DY **rə̀** ʃtʃɪ̃, {TB rə[53]}, LP ʐ̩ɤ[13], QH ʐ̩ɤ[13], JL ʐ̩˩[35]
c. 爰 1153 dźji 1.30 < *ndri

(161) #0232 ‘bone’
a. LX **ɹà** ká, MC **ʐ̩æ̀** ʁoù, TB **ʐ̩ɑ[31]** kie[33], YH **ɦà[ɻ]** kjɛ́
b. WD **ɹà** qá, NWZ **ɹɜ^{L}** kɑ^{H}, {DY **rɑ́** qɑ̆}, TB **rɛ[35]** ka[53], {LP **ʐ̩ɑ[55]** qɑ[13]}, {QH **ʐ̩ɑ[55]** qɑ[13]}, JL **ʐ̩ɑ[11]** qɑ[55]
c. 玑 2778 rjɨr 1.86 < *rjvt

(162) ‘mountain’
a. TP **ʐ̩ɑ[33]** pu[33] ‘cave (mountain)’ YH **ɦù** pú ‘cave’
b. JL **ʐ̩ə[11]** pu[55] (cave)
c. 嶽 1093 rar 1.80 ‘mountain’

(163) #1431 ‘horse’[53]
a. LX ʐ̩où, MC ʁò, {TP ʐ̩u[55]}, YH wĭ ~ wí
b. SL ɣwĩ^{L}, WD gwĭ̃, NWZ gɥɛ̃^{L}, DY ʒdʒĭ̃, TB ɣuẽ[35], LP zgyɛ̃[13], QH sgyɛ̃[13], JL ʐ̩uẽ[35]
c. 毗 0764 rjijr 1.74 < *rjaŋ

(164) #0307 ‘elbow’
a. TP i[33] **kye[33] kye[33]**
b. TB ʑɛ[35] **ku[35]**, LP ʒɛ[55] **xqo[13]**, {QH ʒɛ[13] **kʰu[55]**}
c. 肱 1298 kjiwr 1.79

(165) #2249 ‘fear; be afraid’
a. LX qò ‘fear difficulty’, MC kòu ‘fear’, TP qu[33]
b. WD kɐ̆, NWZ kjɜ̆, TB xiɐ[35], QH skiɛ[13]
c. 牺 2539 kjạ 1.64 < *S-kjar ‘fear, dread’

(166) #5398 ‘needle’[54]
a. LX χèi, MC χɛ̀, TP χe[33], YH χə̆
b. WD qʰŭ, NWZ kʰo^{R}, DY qʰŏ, TB qʰo[35], {LP qʰo[55]}, {QH qʰo[55]}, {JL qʰo[55]}
c. 鎴 4935 ɣa 1.17 < *C-kap

[53] This form may be a *Wanderwört* (see Sagart 1999:199).
[54] The TP form is from an example sentence in H. Sun 1981:81. This word is listed as χe[55] in the Táopíng lexicon. This word exhibits variation in LX χéi ~ χèi, as well as within the Prinmi varieties.

(167) 'shoot (v.)'[55]
a. LX qʰò, MC tʂʰà, TP qʰa^{33}
b. WD ʈʰǎ, NWZ kʰɪ̯ǎ, TB kʰə^{35} tʂʰa^{35}, LP kʰə^{13} tʂʰɑ^{55}, QH kʰə^{13} tʂʰɑ^{55}
c. 𢅛 1922 kʰia 1.18 < *[kraC]

(168) #0229 'bitter'[56]
a. LX qʰà, MC qʰà, {TP qʰa^{55}}, {YH kʰá ~ qʰá}
b. WD qʰǎ, NZW kʰa^{R}, DY qʰǎ, TB kʰa^{35} mə^{53}, LP qʰɑ^{13}, QH qʰɑ^{13}, {JL qʰɑ^{55}}
c. 𣲘 4046 kʰie 1.9 < *[krv]

(169) #2255 'fox'
a. LX qʰà **guà**, LX qʰá **guə̀**, TP qʰɑ^{33} **χguə^{33}**, YH wǎ
b. {TB guə^{53}}, {NWZ gɥɛ^{F}}, LP **guɐ^{13}** po^{55}, QH sgyɛ^{13}, JL ʐyə^{35}
c. 豬 1870 dźiə 1.28 < *[C-ŋg[j]-]

(170) 'clear (of water)'
a. TP dʐe^{33}
b. LP **dʐuɛ̃^{13}** si^{55}
c. 澂 1598 gjii 1.14 < *ŋgje 'clear, clean'

(171) #0096 'write'[57]
a. LX ɹà, MC ɕà
b. WD ɖŭ, NWZ dʐɥ^{R}
b. 𣍐 1715 rjar 1.82 < *rjat

(172) 'circle'[58]
a. LX zɨ **ʑé**
b. TB **rua^{55}** mə^{53}, {LP ʐuɐ^{13} ʐuɐ^{13}}, {QH ʐuɐ^{13} ʐuɐ^{13}}, JL ʐu^{11} ʐuə^{55}
c. 𤲂 2757 ror 2.80

(173) #2627 'sew'
a. LX ɹà í, MC ʐì, TP ʐi^{31} ʐi^{31}, YH zɨ jí
b. WD dʐǐ, NWZ dʐi^{R}, LP dʐi^{13}
c. 𣏌 2568 rer 1.84 < *rvp

(174) 'thick, sticky'
a. LX zà 'sticky', MC pià **dzà** 'sticky'
b. TB **dzu^{35}** mə^{53}, LP **dʑa^{13}** ti^{55} 'sticky, glutinous', QH dzy^{13}, JL dzu^{35}
c. 𥻗 3650 <u>dzə</u> 1.68 < *[S-ndzv]

(175) #5438 'melt'
a. YH dʐə̌
b. WD ɖʐǎe
c. 𣍐 3956 dźji 1.10 < *ndrje

[55] The LP and QH forms are irregular. This may be because these forms are prefixed. In DY, prefixed verbs invariably carry a H tone (Matisoff 1997:209-210, Jacques 2011, Daudey 2014). A similar process may be at work in LP and QH. The pre-Tangut form here is my own suggestion.

[56] The pre-Tangut form is my own reconstruction cf. 𥻗 1572 pʰiow 1.55 < *prvm 'white'.

[57] This form is a semantic extension of the verb 'scratch' (Jacques 2014:125-126). Prinmi forms may be loans from Tibetan ཀྲི་√*bri* 'to write'. See Hill (2005) for the history of this Tibetan word.

[58] This set is somewhat irregular. See Jacques 2014: 263.

(176) #1284 'penis'
a. LX **lià** qə MC **lià** qɛ̀, YH lǐ
b. DY **lɒ̀** dɒ̌ 'testicle'
c. 𱊈 5106 leej 1.37

(177) #3569 'come'
a. LX lò, MC ɳù, TP ly^{33}
b. WD ʑə̌, NWZ ʒɨ^{R}, TB ju^{35}, LP ʒə^{35}, QH i^{13}, JL li^{35}
c. 𱕠 3456 lja 1.20

(178) 'return'
a. LX lò 'return to a place'
b. LP xə^{13} lo^{13}
c. 𱕠 3502 lja 1.20 'return, transport'

(179) #5571 'pants / trousers'
a. MC **ʐɛ̀** tì gù gú 'pant leg', TP **iɑ^{31}** ʃl^{33}
b. WD ʑə̌, TB ʑɨ^{35}
c. 𱖖 1388 ljii 1.14 < *ljaa

(180) #5729 'thick'
a. LX lià, MC lià, TP lie^{33} YH lǎ
b. WD ɦɑ̌, NWZ ɣɑ^{R}, DY ɣɑ̌ ~ ɦɑ̌, TB ɣa^{13}, QH ɣa^{13}, JL lɑ^{35}
c. 𱗠 3192 laa 1.22 < *laak

The data above provide further evidence for the correspondence Rma L – Prinmi L – Tangut 1. The following section deals with some of the irregular correspondences.

4.4.5 Some irregularities

While the data shown thus far suggest that the tonal correspondences are regular, there are some exceptions. Note that in a few of the sets above, such as 'be long', the Táopíng variety has a different tone from Lóngxī and Miánchí. There are several possible reasons for this. First, there is some evidence that some varieties have undergone tonal splits conditioned by segmental factors (see Liu 1998:120-126, Kirby 2001) and this may explain some of the irregularities. Second, differences in the data may be due to differences in collection methods. The Táopíng data were collected by 孙宏开 Sūn Hóngkāi (1981), whereas the Lóngxī and Miánchí data are from Evans (2001a). Differences in the way the data were collected, such as whether forms were elicited in isolation or within a carrier phrase, may have influenced the tone of the forms. Unfortunately, the recordings underlying the transcriptions have not been made available, so it is not possible to verify the accuracy of the transcriptions. Note also that within Prinmi, the 九龙 Jiǔlóng variety sometimes has an unexpected tone. In many of the above sets, the Jiǔlóng form is the only Prinmi reflex which contradicts the otherwise robust pattern of correspondence. More work is needed to understand the reasons for the relative divergence of the tones in Jiǔlóng.

There are some sets which are clearly irregular and are yet unexplained. In most of these sets, Rma and Prinmi have the same tone and Tangut has a different tone. Examples are given in (181-197). Note that although these sets are 'irregular,' there is still regularity within and across Rma and Prinmi.

(181) #2796 'frog'[59]
a. TP dzuɑ^{31} **pu^{55}** mɑ^{33}, LX zò-**piá**, MC dzò-**piá**, YH dzù **pǽ**
b. NWZ **pɜ^{H}** di^{H}, DY ɸpɒ́, LP fpɑ^{55}, QH spɑ^{55}, JL **pɐ^{55}** de^{55}
c. {𱖖 0499 pię 1.66} < *S-pa

[59] Possibly from Tibetan སྤལ་ *spal* 'frog'. Tangut 𱘀 2485 pjəj 2.65 > *[S-pj-] 'tadpole' has the expected tone.

(182) #0335 'foot'[60]
a. TP tʂʰə^{55} 'foot (measure)'
b. WD ʈʰə́, NWZ kʰɯəᴴ, DY ʈʰɨ́, TB tʂʰə^{53}, LP tʂʰə^{53}, QH tʂʰə^{55}, JL tʂʰ˩^{55}
c. {祴 3990 kʰjɨ 1.30}

(183) #3608 'white'[61]
a. TP pʐi^{55}, LX pʰé, MC pʂí, YH pʰjí ~ pʰí
b. WD ʈʰǒ, NWZ pʰɯ̃ɪ̃ᴴ, DY pʰʂé, TB **pʰʐã^{55}** mə^{53}, LP pʰʂə̃^{55}, QH pʰʐə̃^{55}, JL **pʰʐĩ^{55}** lø^{55} lø^{11}
c. {辞 1572 pʰiow 1.55} < *prvm

(184) #0193 'rope'
a. TP bʐe^{33}, MC bʐè
b. WD dʐwě, NZW bʲjẽᴿ, DY bʐě, TB bʐẽ^{35}, LP bʐə̃^{13}, QH bʐə̃^{13}
c. {尵 0251 bji 2.10} < *mbje

(185) #1787 'break (v.i., of rope)'
a. LX bà, MC pʰə̌, TP bʐe^{33},
b. DY bʐě 'snap (v.i.)' TB tə^{35} bʐɛ^{35}, QH tʰə^{13} pʐɛ^{13},
c. {拸 4459 bja 2.17} < *mbjak

(186) 'urine'[62]
a. LX bí, {MC biě}, TP bie^{241}, YH bɨ 'urinate'
b. {SL bĭ}, WD bî, NWZ biẽᶠ, DY βbí
c. {祕 5509 bjɨ 1.67} < *S-mbjeN (also written 緲 3142 bjɨ 1.67)

(187) #0017 'corpse'[63]
a. LX mó, MC mó, YH mì múᴵ
b. {WD mǔ}, {NWZ muᴿ}, LP ŋi^{55} **mu^{55}**, JL mi^{35} **mũ^{55}**
c. {紉 2192 mjij 1.39} < *mjaaŋ

(188) #0681 'eye'[64]
a. TP mi^{55}, LX **ŋ̈í** má toù, {MC mù tié}, YH **mí** kjæ̀
b. SL ŋjé, WD njæ HL, NWZ mjaᶠ, DY myáN, TB ŋ̈iɛ^{53}, LP miɑ^{55}, QH miɑ^{55}, {JL ŋ̈ə^{35}}
c. {祺 4684 mej 1.33} < *mej

(189) 'straight'[65]
a. TP χtə^{55}, LX tí, MC tí 'straight, erect'
b. TB **tu^{55}** mə^{53}, LP stu^{55}, QH stu^{55}, JL tə^{11} **tu^{55}**
c. {𗥃 5128 twụ 1.58} < *S-to

[60] The TP form in STEDT #0355, dʐi^{55} 'foot', does not appear to belong in this set. In Prinmi, this form has the opposite tone when used as a measurement cf. Taoba tə^{35} tʂhə^{35} 'foot (measure)'.

[61] The Tangut form is not included in STEDT. These may be borrowings from Tibetan ཕྲོམ *phrom* 'white' (also not in the STEDT set).

[62] This set contains variation within both Rma and Prinmi. This Tangut form is also written as 緲 3142 bjɨ 1.67, see Jacques 2014:96.

[63] The YH, LP, and JL forms are compounds in which the first syllable is 'person'. The Tangut form may be a deverbal nominal from 龕 0781 mjij 2.33 'die' < *mjaŋ (also written 龕 0788 mjij 2.33) (Jacques 2014:178).

[64] See Hill 2015: 194 for a discussion of the Tangut form.

[65] Tangut 𗥃 5127 twụ 2.51 'genuine, true, real' < *[S-to], listed as an alternate of 𗥃 5128 twụ 1.58 in Gong 1988: 63, has the expected tone.

(190) #0803 'nose'[66]
a. TP **χɳi³¹** qo⁵⁵ pə³³, LX **tì** bá-qà, MC **nà** qɛ́ pì, YH **tə** qá pù
b. NWZ **ɳ̊i**ᴸ dʒjõᴴ, TB **ɳ̊ə³⁵** ɣiã⁵³, LP **xiɛ̃¹³** dʒõ⁵⁵, QH **xiɛ̃¹³** dʒõ⁵⁵, JL **ɳ̊ĩ¹¹** gõ³⁵
c. {祗 5700 njii 2.12} < *njaa

(191) #2499 'red'
a. TP χɳi³¹ɳi³³, LX ɕí, MC nə́, YH xí
b. NWZ neᴴ, DY ɳé, TB ɳɛ⁵⁵ mə⁵³, LP ɳø⁵⁵, QH ɳø⁵⁵, JL ɳɛ̃⁵⁵ 'copper (red; pure copper)'
c. {緊 1671 nji 1.36} < *(r)-njej

(192) 'hoe'
a. TP kua³³, LX tɕuà, MC kuà, YH kwǎ
b. TB **tɕya³⁵** dzə⁵⁵, JL **tʂu³⁵** mɑ⁵⁵
c. {殮 1752 kwạ 2.56} < *S-kwak

(193) #3574 'star'[67]
a. TP **χdzɐ³³** pe⁵⁵, LX **zì** bà, MC dzɛ̀, {YH dzɛ́}
b. WD dɜ̌, NWZ gʲəᴿ, DY dɜ̌, TB dzɐ³⁵, LP dzɐ¹³, QH dzɐ¹³, JL dzɿ³⁵
c. {霧 0108 gjiị 2.61} < *S-ŋgjej

(194) #0632 'tooth'
a. TP suə⁵⁵, {LX sù 'tooth'}, MC sú-nə 'gums', YH ɕwí
b. WD ɻú, NWZ ɻʉᶠ, DY ʂóu, TB ʂʉ⁵³, LP ʂy⁵⁵, QH ʂy⁵⁵, JL xui⁵⁵
c. {詎 0169 śjwi 1.10} < *ɕwa

(195) #6178 'new'
a. LX tɕʰí, MC sí, TP tsʰi⁵⁵, YH sɨ́
b. TB **ɕi⁵⁵ ɕi⁵⁵** mə⁵³, {NWZ ʃiᴿ}, {LP ʂi¹³ ʂi¹³}, {QH ʂi¹³ ʂi¹³}, JL **sə⁵⁵** pa⁵⁵
c. 嶷 3457 sjiw 1.46

(196) #0127 'sleep'[68]
a. LX (ɦà) mà **zè**, MC mè **ʑɛ̀**-qè tuá 'nod off'
b. WD ʑɜ̌, TB kʰə³⁵ **ʑi³⁵**, LP nə¹³ **ʒə¹³**, QH nə¹³ **ʒə¹³**, {JL kʰɯ¹¹ **ʑɯ⁵⁵**}
c. {裖 5136 .jɨ 2.42} < *jvp

(197) #1108 'laugh'
a. TP dzɐ³³, LX dzà ~ zà, MC dzɛ̀, YH dzɛ̌
b. WD nɐ-ɻɜ̌, NWZ ɻaR, DY ʂɑ̌, TB ʂa³⁵, LP ʃɑ¹³, QH ʃɑ¹³, JL ʂɑ¹¹ ʂɑ⁵⁵
c. {薆 4335̊ rjir 2.68} < *rjer

Lastly, there are a relatively small number of sets in which Rma and Prinmi have opposing tones. Examples (198-201) give an exhaustive list of such sets. In examples (198-199) Tangut corresponds with Qiang and in examples (200-201) it corresponds with Prinmi.

(198) #3554 'snow'
a. TP **χpɑ³¹** tʰu³³ 'frost', LX mù **pà**, MC peì, YH pɔ̌
b. {WD pʉ}, {NWZ pʉᶠ}, {TB pʊ⁵³}, {LP fpy⁵⁵}, {QH spy⁵⁵} {JL py⁵⁵}
c. 彼 4091.wjɨ 1.67 < *C-S-pja

[66] The Rma and Prinmi forms all involve some sort of compounding.
[67] Tangut 霧 0109 gjɨj¹ 'constellation' < *[S-ŋgr-] has the expected tone.
[68] STEDT #0127 lacks the Tangut form.

(199) #0621 'tongue'
a. TP **zɿ³¹** qə^{55}, LX **zə̀** qə̀, MC **zɨ** qé, YH **zɨ̌** qə̀
b. {NZW l̥e^{H}}, {TB ɬiɛ^{53}}, {LP **ɬie^{55}** q^{h}o^{55}}, {QH **ɬie^{55}** q^{h}o^{55}}, {JL ɬə^{55}}
c. 紉 3190 l^{h}jwa 1.20

(200) #1016 'moon'
a. {TP **ɕy^{33}** ɕya^{55}}, {LX lə̀}, {MC ɬə̀}, {YH **ɬì** ɕ^{w}ǽ}
b. NWZ l̥i^{H}, TB ɬi^{55}, LP ɬi^{55}, QH ɬi^{55}, JL **ɬi^{55}** ŋɯ^{55}
c. 獩 2814 l^{h}jị 2.60 < *S-l^{h}ja

(201) #0535 'sinew'
a. {LX dzɨ}, {MC dʑɛ̀}, TP dʐɻ^{241}, YH dʐɻ́
b. TB dʐu^{53}
c. 氓 1907 gju 2.3 < *ŋgjo

Note that the Prinmi forms and the Rma forms seem to pattern more closely together than either does with Tangut. Lastly, there are three examples involving Tangut and either Rma or Primi with irregular correspondences.

(202) #2550 'hide, conceal'[69]
a. LX **pià** 'hide self'
c. {㶽 1360 wa} 2.14 < *C-pak

(203) #2772 'axe'[70]
b. NZW pɨ^{F}, DY ɸpɨ́, LP fpy^{55}, JL pi^{55}
c. 羱 5203 .wjị 1.67 < *C-S-pja

(204) 'seat'[71]
a. LX ɹà lì 'lower seat (not honored)', MC ʐɻ́ lè 'lower seat (not honored)'
c. {席 3819 lu 2.1}

While the irregularities presented in this section will need to be resolved or understood in later work, the robustness of the general correspondences presented in 4.4.1-4.4.4. outweighs the problems raised by the irregularities.

5. Conclusions

In summary, this paper has examined the different theories that have been put forward as explanations for the presence of tone in Rma and found them to be unconvincing. Liú (1998)'s proposal that tone arose from onset simplification cannot account for the presence of tone in varieties which preserve complex onsets. Theories of tone as innovation through reanalysis (Evans 2001a-b; Evans & Sun 2013; Stanford & Evans 2012) cannot readily account for the tonal contrasts found on monosyllables.

As an alternative to these theories, I posit that tone is not a subgroup-internal innovation in southern Rma. I have provided subgroup internal evidence for this theory by showing the regular correspondences between the H and L categories in the southern and central varieties of Rma. I have also explored subgroup-external evidence for this theory in the form of comparisons with two other tonal subgroups, Prinmi and Tangut, which are by most accounts closely related to Rma (see Bradley 1997; Ding 2014; Jacques 2008, 2012, 2014; Jacques & Michaud 2011; Matisoff 2004; Takumi 2012; Sūn 1991, 2001). The correspondences

[69] These are both missing from the STEDT set. The *s- prefix in Tangut may be the reason for the unexpected tone. The prefix is not found in Rma or in Tibetan ཕག་ *phag* 'something hidden, concealment'.

[70] STEDT #2772 does not include this Tangut form.

[71] The Rma forms are compounds. An anonymous reviewer kindly draws my attention to the Japhug Rgyalrong cognate tɤ-βju 'padded mattress' and the other related Tangut word 毯 0475 lju 1.3, with the expected tone.

between tonal categories for these three subgroups are rather striking and bolster the case for tone as a retention. Of the sets compared, 180/204 (88%) are regular. In 17 of the 24 irregular sets, the correspondence between Rma and Prinmi is expected, whereas Tangut has an unexpected tone. If we consider tone in Rma to be a secondary, subgroup-internal innovation, any parallelisms with outside subgroups must be coincidental. Yet, the large degree of overlap between the tones in Rma, Prinmi, and, to a somewhat lesser extent, Tangut seems to be too great to be coincidental.[72]

The simplest explanation for these parallels is that Rma, Prinmi, and Tangut shared a common ancestor (later than PTH) which had either suprasegmental contrasts or the phonetic precursor to suprasegmental contrasts, and that suprasegmental contrasts found in (southern and central) Rma, Prinmi, and Tangut constitute shared retentions from this common ancestor or parallel developments following parallel phonetic conditions for tonogenesis.[73]

Although prior work (Evans 2001a-b; Stanford & Evans 2012) has assumed that the non-tonal northern varieties reflect the state of the proto-language, if we reconstruct tone for proto-Rma, we are forced to conclude that the northern varieties were at one point tonal and underwent a process of tone loss. The possibility that the northern varieties were once tonal is considered by Evans (2001a), though he ultimately rejects this hypothesis in favor of the contact-induced tonogenesis hypothesis. Although there is a robust literature on tonogenesis, especially in the Southeast Asian context (Haudricourt 1954; Matisoff 1973; Mazaudon 1977; Pulleyblank 1978, 1986; Thurgood 2002, 2007; *inter alia*), documented instances of tone loss are relatively few (see Ratliff 2015). I wish to point out here one possible way in which the northern varieties may have lost tonal contrasts.

One possibility is that what was once a prominent and culminative tone was reanalyzed as accent. Ratliff (2015:246) notes that the "reanalysis of a prominent tone, or a tone in proximity to toneless syllables, as an accent" is the "best-attested pathway for tone loss". In the case of Rma, with its agglutinative morphology and toneless clitics and affixes, it is not implausible that culminative and positionally restricted tones became reanalyzed as accents. Because the major works on northern varieties do not mark stress-accent (see J. Sun 2003 on this issue), more research is required before any conclusions may be drawn about the links between accent and tone in Rma diachrony.

While more work remains to be done, the subgroup-internal and subgroup-external evidence point toward considering tone as a retention rather than a secondary, subgroup-internal innovation as has been assumed in previous works. Within this framework, there is still some uncertainty about the process of tone loss in the northern varieties, but these issues are less serious than the problems with the hypotheses of tonogenesis in southern and central varieties.

References

Bradley 1979. *Proto-Loloish.* Scandanavian Institute of Asian Studies Monograph Series 39. London and Malmö: Curzon Press.

Bradley, David. 1997. Tibeto-Burman languages and classification. *Pacific Linguistics. Series A. Occasional Papers* 86:1-72.

Bradley, David. 2005. Why do numerals show 'irregular' correspondence patterns in Tibeto-Burman? Some Southeastern Tibeto-Burman examples. *Cahiers de Linguistique - Asie Orientale* 34.2:221-238.

Caplow, Nancy. J. 2009. *The role of stress in Tibetan tonogenesis: a study in historical comparative acoustics*. Doctoral Thesis. University of California, Santa Barbara.

Caplow, Nancy. J. 2017. Reconstructing stress in Proto-Tibetan. *Linguistics of the Tibeto-Burman Area* 39.2:180-221.

[72] The probability of coincidental overlap of tonal categories across subgroups is an empirical question. However, calculating the probability is not straightforward. We would need to consider the number of tonal categories and their relative distribution, along with correlations between tone and segments. For example, although voice onset time and tone are orthogonal in Rma, H toned syllables are more likely to have voiceless in southern Rma (Evans 2001a).

[73] There are some who believe that Tangut is the direct ancestor to Rma and/or Prinmi. However, sound changes unique to Tangut, such as Gong's law, preclude the possibility that either of Rma or Prinmi are direct descendants of Tangut.

Chang, Kun. 張琨. 1967. A comparative study of the Southern Ch'iang dialects, Monumenta Serica, XXVI, 422-443.

Chao, Yuenren. 趙元任. 1930. A System of Tone Letters. *La Maître phonétique* 45:24-27.3-170.

Chirkova, Katia. 2012. The Qiangic subgroup from an areal perspective: a case study of languages of Muli. *Language and Linguistics* 13.1:133-170.

Clauson, Gerard. 1964. The Future of Tangut (Hsi Hsia) Studies. *Asia Major* 11.1:54-77.

Daudey, Henreitte. 2014. A grammar of Wadu Pumi. *Unpublished Doctoral Dissertation, Department of Linguistics, La Trobe University, Melbourne, Australia*.

Ding, Picus Sizhi. 2006. A typological study of tonal systems of Japanese and Prinmi: Towards a definition of pitch-accent languages. *Journal of Universal Language* 7.2:1-35.

Ding, Picus Sizhi. 2007. The use of perception tests in studying the tonal system of Prinmi dialects: A speaker-centered approach to descriptive linguistics. *Language Documentation and Conservation* 1.2:154-181.

Ding, Picus Sizhi. 2014. *A grammar of Prinmi.* Boston. Brill.

Evans, Jonathan P. 2001a. Introduction to Qiang Phonology and Lexicon: Synchrony and Diachrony. Tokyo: ILCAA, Tokyo University of Foreign Studies.

Evans, Jonathan P. 2001b. Contact-Induced Tonogenesis in Southern Qiang. *Language and Linguistics* 2.2:63-110.

Evans, Jonathan P. 2006. Origins of vowel pharyngealization in Hongyan Qiang. *Linguistics of the Tibeto-Burman Area* 29.2:91-123.

Evans, Jonathan P. 2008. 'African' tone in the Sinosphere. *Language and Linguistics* 9.3:463-490.

Evans, Jonathan P. 2009. Is there a Himalayan tone typology? *Senri Ethnological Studies 75*:199-221.

Gao, Yang. 2015. *Description de la langue Menya: phonologie et syntaxe* [Description of the Muya language: phonology and syntax]. (Doctoral dissertation, Paris, EHESS).

Gong, Hwang-cherng. 龔煌城. 1999. The tense vowels in Tangut and their origins. *Bulletin of the Institute of History and Philology Academia Sinica* 70:531-558.

Gong, Hwang-cherng. 龔煌城. 2003. "Tangut." In: *The Sino-Tibetan Languages,* edited by Graham Thurgood and Randy J. LaPolla. London: Routledge, 602-620.

Gong, Hwang-cherng. 龔煌城. 2017. 'Tangut.' In: *The Sino-Tibetan Languages 2nd Edition,* edited by Graham Thurgood and Randy J. LaPolla. London: Routledge, 602-620.

Gong, Xun. to appear. Uvulars and uvularization in Tangut phonology. *Language and Linguistics.*

Greif, Marcus. 2010. 'Tones and intonation in Prinmi – a first survey'. STUF, *Akademie Verlag, 63*.3:221-251.

Hill, Nathan W. 2015. The Contribution of Tangut to Trans-Himalayan Comparative Linguistics. *Archiv orientální* 83.1:187-200.

Hill, Nathan W. 2005. The verb 'bri 'to write' in Old Tibetan. *Journal of Asian & African Studies* 68:177-18

Hill, Nathan W. 2019. *The Historical Phonology of Tibetan, Burmese, and Chinese*. Cambridge University Press.

Huáng, Bùfán. 黃布凡. 1985. *Mùyǎyǔ gàikuàng* 木雅語概況 [Overview of the Muya language]. *Mínzú Yúwén* 民族语文 1985.3:62–77.

Huáng, Bùfán. 黃布凡. 1995. Conditions for tonogenesis and tone split in Tibetan. dialects. *Linguistics of the Tibeto-Burman Area* 18.1:43-62.

Huáng Bùfán 黃布凡 and Zhōu Fāchéng 周发成. 2006. *Qiāngyǔ yánjiū* 羌语研究 [A Study of Qiāng] *Chéngdū* 成都: *Sìchuān Rénmín Chūbǎnshè* 四川人民出版社.

Huáng Bùfán 黃布凡 and Dài Qìngxià 戴庆厦, eds. 1992. *Zàngmiàn yúzú yúyán cíhùi 藏缅语族语言词汇 [A Tibeto-Burman lexicon]*. *Běijīng* 北京*: Zhōngyāng Mínzú Dàxúe Chūbǎnshè* 中央民族大学出版社

Huáng, Chénglóng. 黃成龙. 1998. *Qiāngyǔ yīnjié ruòhuà xiànxiàng* 羌语印记弱化现象 (Syllable weakening in the Qiang language). *Minzu Yuwen* 民族语文 1998.3:59-67.

Huáng, Chénglóng. 黄成龙. 2004. *A reference grammar of the Puxi variety of Qiang* (Doctoral dissertation, Univ. Hong Kong).

Huáng, Chénglóng.黄成龙. 2010. *Qiāngyǔ de shīshìzhé jíqí xiāngguān biāojì* 羌语的施事者及其相关标记 [Agentive and other markings in Qiang], *Language and Linguistics* 11.2:249-295.

Ikeda Takumi. 池田巧. 2002. On pitch accent in the Mu-nya language. *Linguistics of the Tibeto-Burman Area* 25.2:27-45.

Ikeda Takumi. 池田巧. 2007. *Qiāngyǔ zhī yǔyán de zhēngcí: Shì tàn Xīxiàyǔ hé Qiāngyǔ zhī de guānxi* 羌语支语言的特征词:试探西夏语和羌语支的关系 [Characteristic words of the Qiangic languages: A contribution to the comparative study of Qiang and Tangut]. Paper presented at the 40th International Conference on Sino-Tibetan Languages and Linguistics, Harbin.

Jacques, Guillaume. 2005. Phonologie et morphologie du Japhug (rGyalrong). *Cahiers de linguistique-Asie orientale* 34.1:153-158.

Jacques, Guillaume. 2006. Essai de comparaison des rimes du tangoute et du rgyalrong. [Test comparisons of the rhymes of Tangut and Ryglarong]. In C.I. Beckwith (ed.) Medieval Tibeto-Burman Languages II, 121-152. Brill.

Jacques, Guillaume. 2005. Phonologie et morphologie du Japhug (rGyalrong). [The phonology and morphology of Japhug Rgyalrong] *Cahiers de linguistique-Asie orientale* 34.1:153-158.

Jacques, Guillaume. 2009. The origin of vowel alternations in the Tangut verb. *Language and linguistics* 10.1:17-27.

Jacques, Guillaume. 2011. Tonal alternations in the Pumi verbal system. *Language and Linguistics* 12.2:359-392.

Jacques, Guillaume. 2012. The Tangut kinship system in Qiangic perspective. *Medieval Tibeto-Burman Languages IV*, 211-258.

Jacques, Guillaume. 2014. *Esquisse de phonologie et de morphologie historique du tangoute* [*Sketch of Tangut historical phonology and morphology*]. Leiden: Global Oriental.

Jacques, Guillaume. 2015. The fortuitous resemblance between related words [Blog post]. Retrieved from http://panchr.hypotheses.org/616 (ISSN 2494-775X).

Jacques, Guillaume. 2016a. *Dictionnaire Japhug-chinois-français* [*Japhug-Chinese-French Dictionary*], Version 1.1.(http://himalco.humanum.fr/dictionaries/japhug/dictionary.pdf)

Jacques, Guillaume. 2016b. Tangut, Gyalrongic, Kiranti and the nature of person indexation in Sino-Tibetan/Trans-Himalayan. *Linguistics Vanguard*, *2*(1).

Jacques, Guillaume., & Michaud, A. 2011. Approaching the historical phonology of three highly eroded Sino-Tibetan languages: Naxi, Na and Laze. *Diachronica* 28.4:468-498.

Kingston, John. 2007. Phonological pertinacity/phonetic variability. Paper presented at the University of Oregon colloquium series, May 25.

Kingston, John. 2011. Tonogenesis. In van Oostendorp et. al (eds.) *The Blackwell companion to phonology*, 2304-2333. Blackwell.

Kirby, James. 2001. A tone split in Taoping Qiang. Presentation at 21st meeting of the South East Asian Linguistics society at Kasetsart University on May 11-13, 2001.

Kornicki, P. 2012. Steps Towards a History of the Tangut Book: Some Recent Publications. *East Asian Publishing and Society* 2.1:83-91.

Lài Yúnfān. 赖云帆 2017. Grammaire du khroskyabs de Wobzi [A grammar of Wobzi Khroskyabs]. Linguistique. Universite Sorbonne Nouvelle. Francais.

LaPolla, Randy J. 2013. Subgrouping in Tibeto-Burman. *Language typology and historical contingency*, 463-474.

LaPolla, Randy J. with Huáng Chénglóng. 2003. *A Grammar of Qiang with Annotated Texts and Glossary*, Berlin: Mouton de Gruyter.

Lǐ, Fànwén. 李範文. 1997. *Xià-Hàn zìdiǎn* 夏漢字典 [*Tangut-Chinese dictionary*]. Běijīng 北京: *Zhōnggúo Shèhùi Kēxúe Chūbǎnshè* 中国社会科学出版社.

Lǐ, Fànwén. 李範文. 2008. *Xià-Hàn zìdiǎn* 夏漢字典 [*Tangut-Chinese dictionary*], Revised edition. *Běijīng* 北京: *Zhōngguó Shèhùi Kēxúe Chūbǎnshè* 中国社会科学出版社.

Lín, Yoùjǐng. 林幼菁 2012. By no means marginal: Privative tone in Zhuokeji Rgyalrong. *Language and Linguistics* 13.4:625-662.

Liú, Huīqiáng. 刘辉强. 1991. *Qiāngyǔ Mùsūhuà yīnxì* 羌语木苏话音系 [The phonology of Musu Qiang]. *Qiāngzú yánjīu* 羌族研究 1.1:102-108.

Liú, Guangkun. 刘光坤. 1984. *Qiāngyǔ fǔyīn yùnwěi yánjiū* 羌语辅音韵尾研究[A study on the consonant finals of the Qīang language]. *Minzu Yuwen* 民族语文 1984.4:39-47, 63.

Liú, Guangkun. 刘光坤. 1998. *Máwō Qiāngyǔ yánjiū* 麻窝羌语研究 [A study of Máwō Qīang]. 成都 *Chéngdū*: *Sìchuān Mínzú Chūbǎnshè* 四川民族出版社 [Sichuan Nationalities Publisher].

Lú, Shaòzūn. 陆绍尊. 1983. *Pǔmǐyú jiǎnzhì* 普米语简直 [A Brief Description of the Pumi language]. 北京 Beijing: *Mínzú Chūbǎnshè* 民族出版社 [Nationalities Publisher].

Lú, Shaòzūn. 陆绍尊. 2001. *Pǔmǐyú fāngyán yánjīu* 普米方言研究 [A dialectal study of the Pumi language]. *Beíjīng* 北京: *Mínzú Chūbǎnshè* 民族出版社 [Nationalities Publisher].

Michaud, Alexis., & Jacques, G. 2010. Insights into Naxi and Pumi at the end of the 19th century: evidence on sound changes from the word lists by Charles-Eudes Bonin. *Cahiers de Linguistique Asie Orientale* 39.1:21-40.

Miyake, Marc. H. 2012. Complexity from Compression: a Sketch of Pre-Tangut. In Irina Popova (ed.), Тангуты в Центральной Азии: сборник статей в честь 80-летия проф. Е. И. Кычанова [Tanguts in Central Asia: a collection of articles marking the 80th anniversary of Prof. E. I. Kychanov], 244–61. Moscow: Vostochnaja literatura.

Matisoff, James A. 1973. Tonogenesis in Southeast Asia. In Larry Hyman (ed.) *Consonant Types and Tone*, Southern California Occasional Papers in Linguistics. Los Angeles: Linguistics Program University of Southern California.

Matisoff, James. A. 1997. Sino-Tibetan numeral systems: prefixes, protoforms and problems. Canberra, A.C.T., Australia: Pacific Linguistics Research School of Pacific and Asian Studies Australian National University.

Matisoff, James. A. 2003. *Handbook of Proto-Tibeto-Burman: system and philosophy of Sino-Tibetan reconstruction* (Vol. 135). University of California Press.

Matisoff, James. A. 2004. Brightening" and the place of Xixia (Tangut) in the Qiangic branch of Tibeto-Burman. *Studies on Sino-Tibetan languages: Papers in honor of Professor Hwang-cherng Gong on his seventieth birthday*, 327-352.

Mazaudon, Martine. 1977. Tibeto-Burman Tonogenetics. *Linguistics of the Tibeto-Burman Area* 3.2:1-123.

Nishida, Tatsuo. 西田龍雄. 1964. Seikago no Kenkyū 1 西夏語の研究 I [*A study of the Hsi-Hsia Language*]. Tokyo: Zauhō Kankōkai.

Nishida. Tatsuo. 西田龍雄. 1976. Hsihsia, Tosu and Lolo-Burmese Languages. *音声科学研究 Studia phonologica* 10:1-15.

Pulleyblank, Edwin G. 1978. The nature of Middle Chinese tones and their development to Early Mandarin. *Journal of Chinese Linguistics* 6.2:172-203.

Pulleyblank, Edwin G. 1986. Tonogenesis as an index of areal relationships in East Asia. *Linguistics of the Tibeto-Burman Area* 9.1:65-82.

Riad, Tomas. 1998. The origin of Scandinavian tone accents. *Diachronica* 15.1:63–98.

Riad, Tomas. 2003. Diachrony of the Scandinavian accent typology. In Paula Fikkert & Haike Jacobs (eds.) Development in prosodic systems, 91–144. Berlin & New York: Mouton de Gruyter

Ratliff, Martha. 2015. Tonoexodus, tonogenesis, and tone change. *The Oxford handbook of historical phonology*, 245-261.

Sagart, Laurent. 1999. The Roots of Old Chinese. Current Issues in Linguistic Theory, 184. Amsterdam: John Benjamins.

Sagart, Laurent, Guillaume Jacques, Yunfan Lai, Robin J. Ryder, Valentin Thouzeau, Simon J. Greenhill & Johann-Mattis List. 2019. Dated language phylogenies shed light on the ancestry of Sino-Tibetan. Proceedings of the National Academy of Sciences 116.21:10317–10322. doi:10.1073/pnas.1817972116

Sims, Nathaniel A. 2014. A phonology and lexicon of the Yonghe variety of Qiang. *Linguistics of the Tibeto-Burman Area 37.*1:34-74.

Sims, Nathaniel. A. 2017. *The Suprasegmental Phonology of Yonghe Qiang in Typological Perspective* (MA, University of California Santa Barbara).

Sofronov, Mikhail V. 1968. *Грамматика тангутского языка* [*A Grammar of the Tangut Language*]. 2 volumes. Moscow: Nauka.

Stanford, James. N., & Evans, Jonathan. P. 2012. The influence of Mandarin Chinese on minority languages in rural southwest China: a sociolinguistic study of tones in contact. *International journal of the sociology of language* 215:79-100.

Sūn, Hóngkāi. 孫宏開. 1981. *Qiāngyú Jiǎnzhí* 羌语简直 [A Brief Description of the Qiang language]. Beijing: 民族出版社 Nationalities Press.

Sūn, Hóngkāi. 孫宏開. 2001. *Lùn Zàng-Miàn yúzúzhōng de Qiāngyúzhí yǔyán* 论藏缅语族中的羌语支语言 [On the Qiangic branch of the Tibeto-Burman language family]. *Language and Linguistics* 2.1:157-181.

Sūn, Hóngkāi. 孫宏開. 2004. *Cíhuì bǐjiào: Cóng cíhuì bǐjiào kàn xīxià yǔ de lìshǐ dìwèi* 詞彙比較:從詞彙比較看西夏語的歷史地位 [Lexical comparison: The historical position of Tangut language from lexical comparison]. In Lǐ, Fànwén (李範文) (ed.), *Xīxiàyǔ bǐjiào yánjiù* 西夏語比較研究 [Comparative studies on Tangut], 256–351. Yinchuan: Ningxia Renmin Chubanshe.

Sun, Jackson. T.-S. 1997. Typology of tone in Tibetan, in Tseng Chiu-yu (ed.) *Chinese Languages and Linguistics IV: Typological studies of languages in China; Symposium Series of the Institute of History and Philology, Academia Sinica;* Number 2, 485-521. Nankang, Taipei, Academia Sinica.

Sun, Jackson. T.-S. 2003. Issues in Máwō phonology. *Journal of Taiwanese Languages and Literature 2*.1:227-242.

Sun, Jackson. T.-S. 2008. Tonality in Caodeng rGyalrong. *Chomolangma, Demawend und Kasbek, Festschrift für Roland Bielmeier* 1:257-280.

Sun, Jackson T.-S. to appear. The ancestry of Horpa: Further morphological evidence. In Jianping Kong (ed.), Ancestry of the languages and peoples of China, Hong Kong: The Chinese University Press.

Sun, Jackson T.-S. & Evans, Jonathan P. (孫天心, 余文生). 2013. *Máwō Qiāngyǔ yuányīn yīnxì zàitàn* 麻窩羌語元音音系再探 [The vocalic system of Máwō Qiāng revisited]. In Peng, Gang et al. (eds.), *Eastward flows the great river: Festschrift in honor of Professor William S.-Y. Wang on his 80th birthday*, 135-151. Hong Kong: City University of Hong Kong Press.

Sun, Jackson T.-S, Tian Qianzi & Chenhao Chiu. 2017. Contrastive phonation in Upper Donggu Horpa. *Journal of Chinese Linguistics 45*.1:1–19.

Thurgood, Graham. 2002. Vietnamese and tonogenesis: Revising the model and the analysis. *Diachronica* 19.2:333-363.

Thurgood, Graham. 2003. A subgrouping of the Sino-Tibetan languages: The interaction between language contact, change, and inheritance. Thurgood & LaPolla (eds.) *The Sino-Tibetan Languages*, 3-21. Routledge.

Thurgood, Graham. 2007. Tonogenesis revisited: Revising the model and the analysis. *Studies in Tai and Southeast Asian Linguistics*, 263-291.

Wáng, Míngkē. 王明珂. 1998. *From the Ch'iang Barbarians to Ch'iang Nationality: The Making of a New Chinese Boundary*. Institute of Ethonology, Academia Sinica.

Reviewed: Received 22 July 2019, revised text accepted 14 August 2019, published 1 February 2020
Editors: Editor-In-Chief Dr Mark Alves | Managing Eds. Dr Paul Sidwell, Dr Nathan Hill, Dr Sigrid Lew